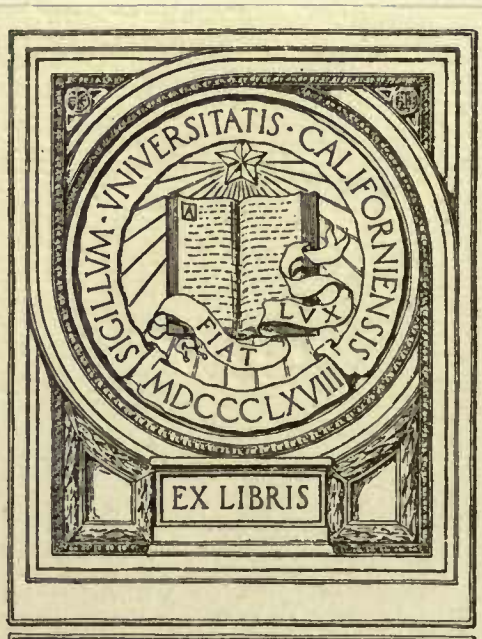

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NATAL PLANTS.

Volume 4.

—BY—

J. MEDLEY WOOD, A.L.S,

DIRECTOR OF NATAL BOTANIC GARDENS, DURBAN,

—AND OF—

NATAL GOVERNMENT HERBARIUM.

UNIV. OF CALIFORNIA

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PREFACE.

In presenting this volume, it is not necessary for me to say more than to thank the Government for the Grant which we receive towards the expense of publication, and the Botanic Society under whose auspices it has been carried on.

I hope to be able to commence Volume 6, which, like the present Volume, will contain figures and descriptions of miscellaneous plants, and it is hoped that the Government may be able to continue the Grant so necessary for the purpose. The Grasses will be completed in Volume 5, now in course of preparation.

One of the artists left on her marriage, before the Volume was completed, and the remainder of the drawings and dissections have been quite satisfactorily done by Miss Franks.

J. M. WOOD.

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Cynanchum (Vincetoxicum) natalitium, *Schlechter.*

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PLATE 301.

CYNANCHUM (VINCETOXICUM) NATALITIUM, Schlecht (Engl. Bot. Jahrb. XVIII. 4, No. 45).
Natural Order, ASCLEPIADEAE.

A climber with green and white flowers. Stems glabrous, younger minutely pubescent, terete, wide climbing. Leaves opposite, petiolate, exstipulate, ovate to oblong, entire, mucronulate, glabrous, somewhat fleshy, dark green above, pale beneath, reaching to $2\frac{1}{2}$ inches long, $1\frac{3}{4}$ inch wide; petioles 1 to $1\frac{1}{2}$ inch long, often curved. Inflorescence in axillary umbels each with 4 to 8 flowers, peduncles equalling the petioles, pedicels slender, 3—5 lines long, bracteate at base, bracts minute, triangular. Calyx, gamosepalous, 5-lobed, lobes triangular, acute, much longer than corolla, margins membranous. Corolla gamopetalous, rotate, 5-cleft almost to base, lobes oblong to oblong-lanceolate, obtuse, 2 to 3 lines long, $\frac{1}{2}$ to $\frac{3}{4}$ line wide, dull green. Corona tubular, contracted at apex, shortly 5-lobed, lobes truncate with inflexed margins, the whole corona 2 lines long. Gynostege much shorter than corona, anthers short, with membranous apices and incised margins. Pollinia oblong, compressed, caudicles short, inserted at the base of the oblong obtuse glands. Stigma 5-angled. Follicles oblong-acuminate, 3-winged, 2 to $2\frac{1}{2}$ inches long, $\frac{1}{2}$ to 1 inch wide, on a strongly curved peduncle.

Habitat: NATAL: Coast districts, near the sea. *Schlechter*, 3082; Bluff 250 feet alt., July, *Wood*, No. 5387.

Drawn and described from specimens gathered near Durban, August, 1902.

This plant has hitherto been confused with C. crassifolium, with which in general appearance it quite agrees, but Schlechter says in a note to his description of the species;—"I first considered this plant to be a cross between C. crassifolium (L. f.) and C. capense (E. M.), *Schlechter*, but on further examination I altered my opinion, as I found that the anthers and pollinia were quite different from either." We find also that the corona lobes differ from those of C. crassifolium, which are lanceolate, while in C. natalitium they are as stated in the text. Mr. Schlechter also says that C. natalitium is the only new species of Cynanchum that has been collected since Drege's time. It is fairly common in the coast bush.

Fig. 1, a flower; 2, calyx; 3, staminal column and stigma, one stanen removed, showing carpels; 4, anther; 5, pollinia; all enlarged; 6, follicle, natural size.

PLATE 302.

EUPHORBIA NATALENSIS, Bernh. (ex Krauss in Flora XXVIII. (1845), 86).
Natural Order, EUPHORBIACEAE.

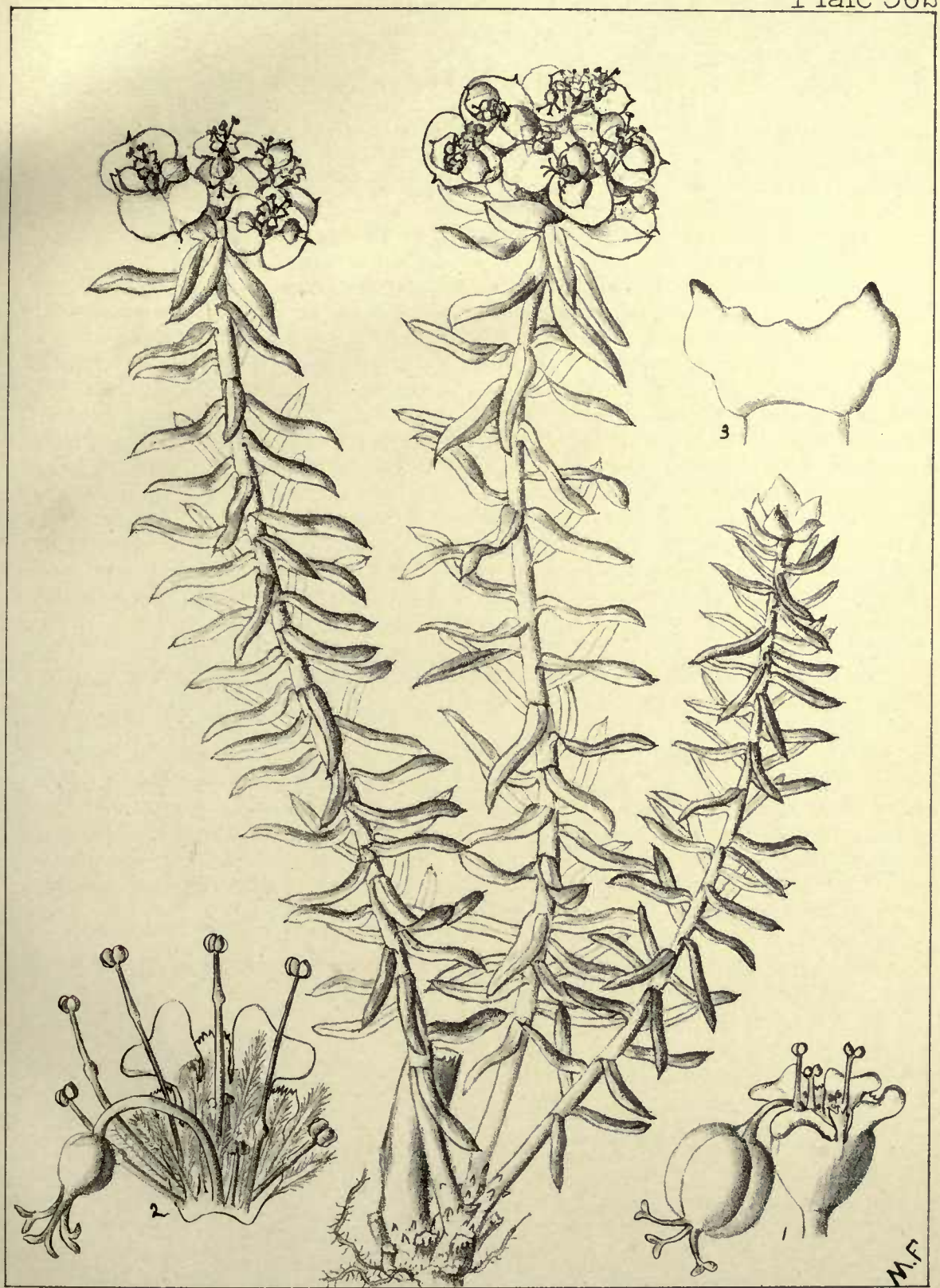
A low undershrub, having one or many stems from a woody root. Stems erect, terete, simple, minutely pubescent; 6 to 18 inches high. Leaves thickly scattered on the stem, subsessile, linear-oblong, quite entire, rounded at each end, mucronate at apex, patent, dark green above, glaucous beneath; $\frac{3}{4}$ to 1 inch long, $1\frac{1}{2}$ to $2\frac{1}{2}$ lines wide, the upper ones or floral leaves much wider. Inflorescence of many male and a solitary female flower, enclosed in a cup-like involucre; the involucres in terminal or subterminal compound cymes. Bracts 2, sub-rotund, emarginate, margins entire, mucronate, light green, longer than the involucre; 3 to 4 lines long, $1\frac{1}{2}$ to 2 lines wide. Involucre campanulate with 5 quadrangular lacerate lobes. Glands 4, on margin of involucre, shortly stalked, flattened, and irregularly toothed on upper portion, or entire; yellow-green. Male flowers numerous, without floral envelopes, mixed with numerous filiform pilose bracteoles. Filaments each on a pilose pedicel, and globose at base, glabrous; anthers 2-celled, cells distinct, globose. Female flower pedicelled, pedicel pilose, much longer than the involucre, and usually much recurved. Floral envelopes none. Ovary subglobose, 3 cells, cells 1-ovuled. Styles 3, 2-fid; stigmas obtuse. Capsule, 3-coccous, cocci elastically 2-valved.

Habitat: NATAL: Clairmont, 50 feet alt., February, *Wood*, No. 1429; Inanda, *Wood*; near Durban, August, *Wood*.

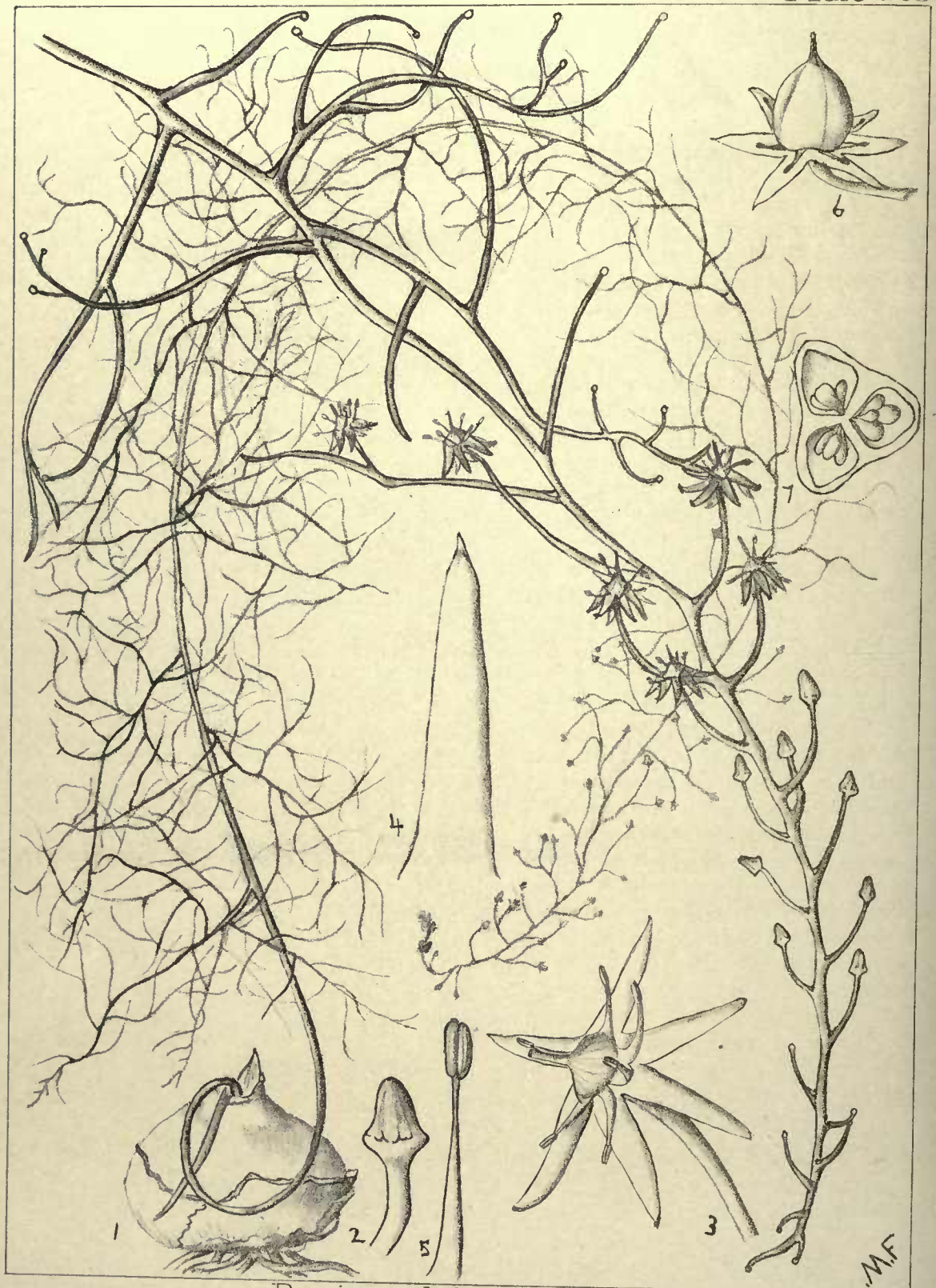
A rather pretty plant, which is not uncommon in the coast and midland districts. It will be noticed that though the involucre is 5-lobed the glands are 4 only and alternate with the lobes, the place of the 5th gland being occupied by the bending pedicel of the ovary which springs from the centre of the involucre, and becomes strongly recurved, the ovary turning completely over. A secondary peduncle frequently proceeds from the primary pair of floral leaves, occasionally, perhaps, more than one.

The sap of the plant is milky, but does not appear to have vesicatory properties. The natives have no name for it, and do not appear to use it in any way.

Fig. 1, flower head; 2, same opened two glands removed; 3, a gland; all enlarged.



Euphorbia natalensis, *Bernh.*



Bowiea volubilis, *Harv.*

PLATE 303.

Bowiea volubilis, Harv. (Fl. Cap. Vol. 6, p. 367).
Natural Order, Liliaceae.

A climbing almost leafless plant. Bulb globose, tuber-like, often lying above the surface of the ground, 4 to 6 inches diameter, with a few thick distichous tunics. Leaves 1 to 3, radical, small, flat, grass-like, erect, very soon withering, and often not to be found. Stem sarmentose, often 6 feet or more long, much branched, especially in lower portion, the branches bearing numerous ascending more or less curved branchlets, the stem, branches, and branchlets green, terete, quite glabrous, and bearing a minute subulate bract at each division. Flowers solitary, light green, pedicellate, pedicels terete, arcuate, some of the flowers imperfect. Perianth 6-parted to base, the segments lanceolate, strongly reflexed 2 to 3 lines long, 1 line wide at base, withering, persistent. Stamens 6, on base of and opposite lobes of perianth, and about two-thirds of their length; filaments sublulate; anthers linear, erect, opening inwards. Ovary, sessile, ovoid, 3-celled cells many ovuled, ovules superposed; style equalling filaments in length, very obscurely 3-lobed. Capsule ovoid, glabrous, brownish when ripe, dehiscing oculicidally; seeds compressed, black, shining.

Habitat: Natal: Midlands, usually in slight shade; without precise locality; *McKen*, No. 32; *Cooper*, No. 3263.

Drawn and described from specimens in Botanic Gardens, flowering in September, 1902.

A singular plant, the only one of its genus; it is confined to South Africa, and is not uncommon in cultivation. The juice of the bulb has irritant properties, but is not vesicant; the natives use it for rubbing on the skin in cases of sickness, and they also take a portion of the bulb, boil it, and then strain off the water, and use as a lotion for sore eyes; and in the early days when an "impi" or "commando" was going out to war, the native doctors used to sprinkle the warriors with a decoction of the bulb, which was said to have the effect of making their enemies flee before them. The native name is "Gibisila." In the imperfect flowers the perianth is lighter in colour, its segments erect or patent, not reflexed, the anthers contain but little pollen, the ovary is rudimentary and contains a few imperfect ovules.

Fig. 1, plant reduced; 2, bud; 3, flower; 4, lobe of perianth; 5, stamen; 6, ovary; 7, cross-section of ovary; except Fig. 1, *all enlarged.*

PLATE 304.

DRIMIOPSIS MACULATA, Lindl. (Fl. Cap. Vol. VI., p. 473).
Natural Order, LILIACEAE.

Bulb tunicate, globose, 1½ to 2 lines diameter. Leaves 2 to 6, petiolate, petioles very deeply channelled, 1 to 6 inches long, blade cordate-ovate, 3 to 5 inches long, margin entire; acute at apex, glabrous and shining, green with large dark rounded blotches, on upper surface only. Peduncle 4 to 15 inches long, terete. Raceme dense; 1 to 3 inches long, the lower flowers green, uppermost white, central greenish white; pedicels 1 to 1½ line long, lower ones deflexed, upper erect. Bracts none. Perianth 6-parted nearly to base, campanulate, persistent, the 3 outer segments cucullate by inflexing of the apex, the 3 inner ones broader and hooded by infolding of the upper portion of the margins. Stamens 6, inserted at base of the perianth segments; filaments short, dilated at base, triangular; anthers 2-celled, versatile; as long as the filaments. Ovary sessile, globose-trigonous, 3-celled, cells 2-ovuled; style short, cylindrical; stigma minute, capitate. Capsule globose-trigonous; normally 6-seeded, but some or many of the seeds often abortive.

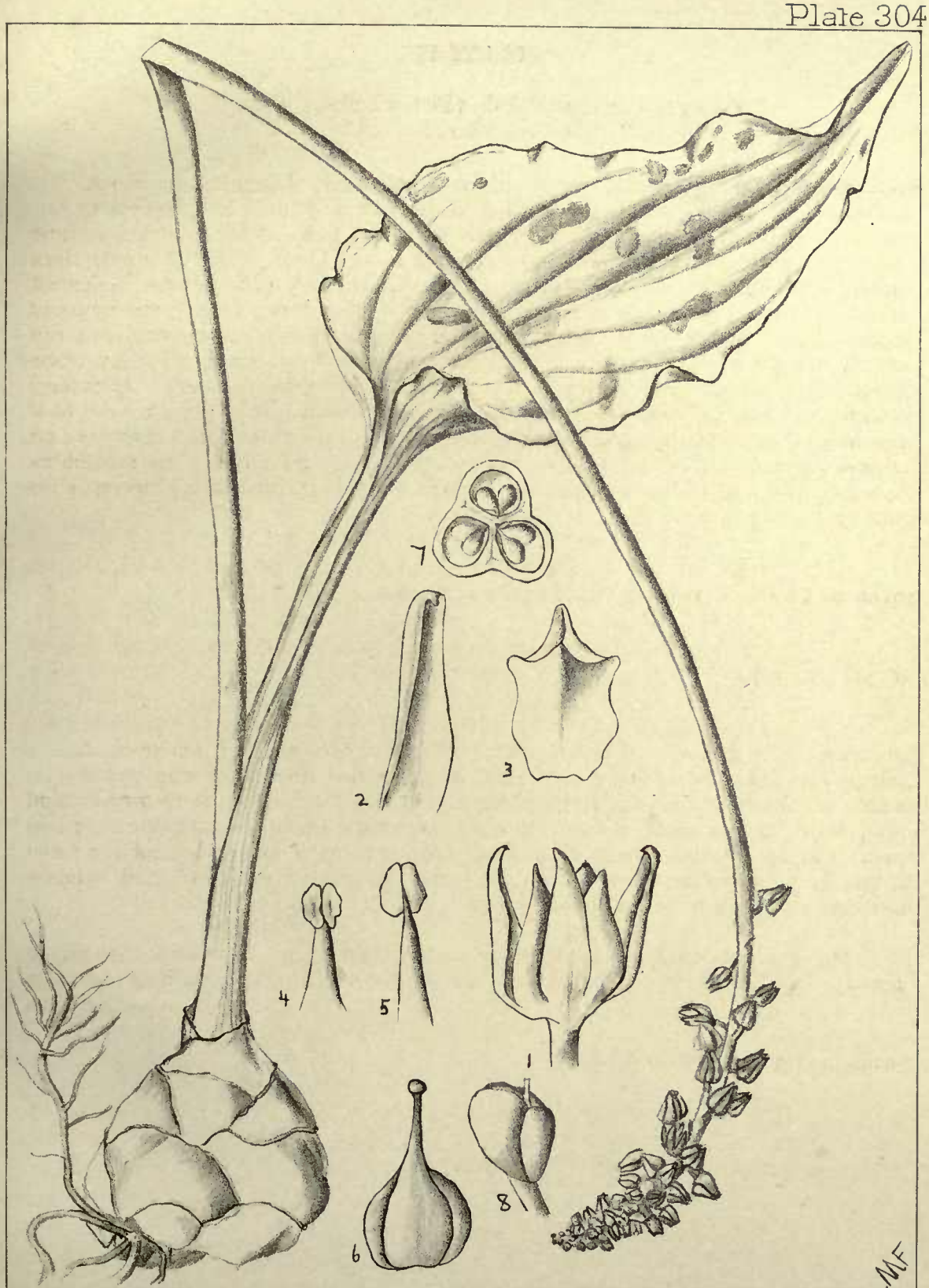
Habitat: NATAL: Near Durban, September and October, *Wood*; Inanda, September, *Wood*, No. 233; Nottingham, *Buchanan*.

Drawn and described from specimens gathered near Durban, October, 1902. *Wood*, No. 8654.

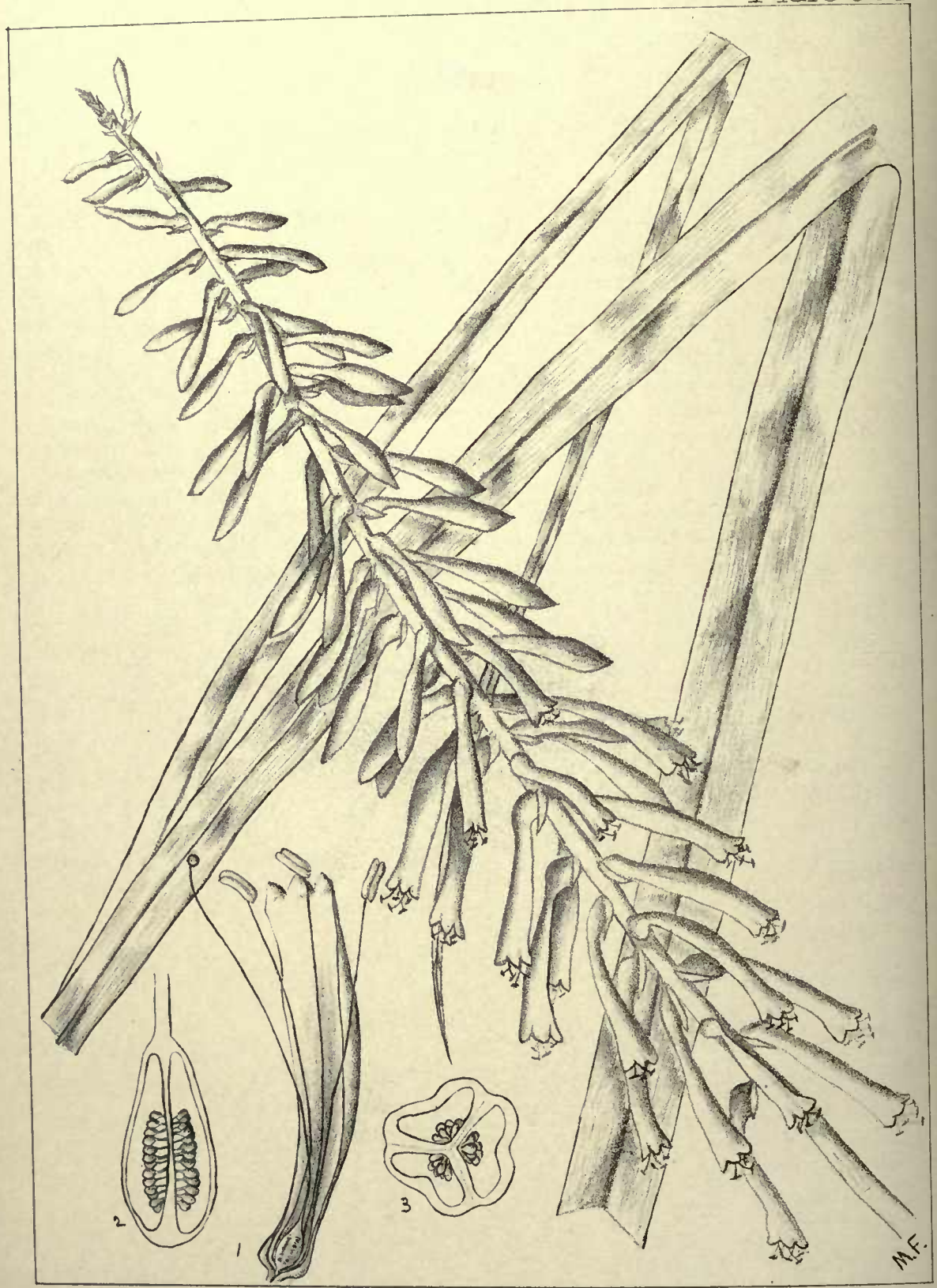
A common plant in coast and midland districts, flowering in September and October. The raceme is at first very short, the buds crowded together, and the colour greenish-white; the lower buds soon become green, and the upper ones white, the raceme increases in length, and the flowers become more distant from each other; as the buds open from the lower part of the raceme upwards they become green, the upper ones remaining white until when all are opened the white colour has quite disappeared, while the lower flowers have formed their capsules or fallen off without bearing seeds.

The genus is a small one, containing 11 species only, of which 7 are South African, the other 4 Tropical African; of the South African ones 6 appear to be confined to Natal, and one is found in Transvaal. None of the species have any ornamental or economic value, nor do the natives appear to have a distinctive name for the one here described.

Fig. 1, flower; 2, exterior lobe of perianth; 3, interior lobe of same; 4, stamen, front view; 5, stamen, back view; 6, ovary, style and stigma; 7, cross-section of ovary; 8, capsule; *all enlarged.*



Drimiopsis maculata, *Lindl.*



Kniphofia natalensis, *Baker*.

PLATE 305.

KNIPHOFIA NATALENSIS, Baker. (Fl. Cap. Vol. VI. p. 281).
Natural Order, LILIACEAE.

Rootstock, neither bulbous nor tuberous. Leaves linear, elongate, 1 to 4 feet long, up to $\frac{1}{2}$ inch broad at base, tapering to 2 to 3 lines at apex, strongly channelled from base to apex, and sharply keeled beneath; coriaceous, with 10 to 15 distinct veins between the midrib and the thickened margin, quite glabrous. Peduncle terete, glabrous, 2 to 4 feet long, naked, with a few distant empty bracts below the flowers. Raceme lax, 6 to 8 inches long. Bracts oblong-lanceolate, scarious, with a distinct brownish midvein, $\frac{1}{6}$ inch long. Flowers yellow, buds red, gradually becoming yellow as they open (in the variety *condensata* the flowers are yellow in all stages). Perianth sub-cylindrical, constricted above the ovary; 1 to $1\frac{1}{4}$ inch long; segments 6; ovate, 1 line long. Stamens 6, hypogynous, as long as the perianth, filaments filiform, the three opposite the inner segments longest, and finally a little exserted, the others included; anthers oblong, dorsi-fixed, versatile, opening inwards. Ovary superior, sessile, ovoid, 3-celled, many ovuled, ovules superposed; style filiform, longer than stamens; stigma minute, capitate. Capsule 4 lines long, seeds angular, testa brownish black.

Habitat: NATAL: In open ground all over the colony. Inanda, 1,800 feet alt., *Wood*, No. 636; hills above Tugela River, Zululand, *Wood*, No. 3871; without precise locality, *Adlam*; var. *angustifolia*, Tabamhlope Mountain, 6,000 to 7,000 feet alt.; *Evans*, No. 411; var. *condensata*, near Manderston, 2,800 feet alt., *Wood*. Also in Griqualand East.

Drawn and described from specimens in Botanic Gardens, Durban, October, 1902, *Wood*, No. 8605.

This genus is said to contain 46 specimens, of which 32 are South African, 12 Tropical African, and 2 outliers in Madagascar; of the 32 South African species 10, or perhaps more, are found in Natal. Most of the species are ornamental, and are not uncommon in cultivation.

The variety "*condensata*" does not differ much from the type, except that the flowers are yellow in all stages of growth, and we have seen it with both scape and leaves longer than is usual in the type. Native name "i-quaquana."

Fig. 1, longitudinal section of flower; 2, longitudinal section of ovary; 3, cross-section of ovary; *all enlarged.*

PLATE 306.

Scilla megaphylla, Baker (Fl. Cap. Vol. VI. p. 490).
Natural Order, Liliaceae.

Bulb large, 4 inches or more diameter, tunics thin, veiny. Leaves sessile, lorate-lanceolate, 1½ foot long, 3 to 3½ inches broad in centre, acute at apex where the extreme margins are strongly infolded (in young specimens at least), a little narrowed to base, the parallel veins in lower portion of the outer leaves dark coloured. Peduncles, several to each bulb, 9 to 12 inches long, flattened in lower portion, somewhat angular above, usually thickly covered with minute red spots in central portion, sometimes dull red in upper part. Raceme (in our specimens) 4½ to 5½ inches long, 1¼ to 1½ inches diameter, laxly many flowered; pedicels erect or patent, 4 to 5 lines long; bracts subulate from a broad base, 2½ lines long. Perianth light green, campanulate, segments 6, oblong, acute, 2¾ lines long, green in centre, margins whitish. Stamens 6, equalling perianth lobes, filaments white, anthers ovate, versatile. Ovary sessile, 3-celled, cells 2-ovuled, ovules collateral; style a little longer than the stamens; stigma minute, truncate. Capsule loculicidally 3-valved.

Habitat: Natal: Zululand, *J. Wylie* (*Wood*, No. 8645). Also in Transvaal.

Amongst the Natal species of Scilla this one is well distinguished by the size of its mature leaves as compared with the size of the bulb and inflorescence. It was first found by Mr. Galpin in "damp grassy hollows near Barberton," at an altitude of 2,800 feet. Bulbs were afterwards brought from Zululand by Mr. Wylie and grown in the Botanic Gardens, Durban (*Wood*, No. 8645), but the leaves have not attained their full size here.

In Fig. 7 the artist has shown the ovary with all the ovules present, but we have seldom found more than one cell in the ovary with two ovules. In Mr. Galpin's 1184, a specimen of which is in the herbarium received from Mr. Galpin, the ovaries are too small for us to be able to ascertain whether this is so in plants gathered in the wild state.

Fig. 1, bulb with leaves and young flowers reduced; 2, raceme, nat. size; 3, leaf about nat. size; 4, flower; 5, perianth and stamen; 6, pistil; 7, cross-section of ovary; except Figs. 1, 2, 3, *all enlarged.*

Scilla megaphylla, *Baker*.

Sclerocarya caffra, *Sond.*

PLATE 307.

SCLEROCARYA CAFFRA, Sond. (Fl. Cap. Vol. I. p. 524).
Natural Order, ANACARDIACEAE.

A deciduous tree 20 to 30 feet high, with rough bark, and branches rough with scars of fallen leaves. Leaves crowded at the ends of the branches, alternate, petiolate, exstipulate, unequally pinnate, 6 to 12 inches long, including the common petiole, which is 2 to 4 inches long and minutely pubescent, compressed at base, and tinged with pink above; leaflets 5 to 13, opposite, ovate to elliptical, tapering to the petiolule at base, cuspidate at apex, margins entire, and pinkish in the younger leaves, lamina green above, pale beneath, glabrous except along the mid-vein beneath, where it is pubescent with minute woolly hairs, 1 to 2 inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inches wide; secondary petioles $\frac{1}{2}$ to 1 inch long. Male flowers racemose, appearing with the leaves, and amongst them; 2 to 4 inches long, few flowered. Sepals 4, suborbicular, concave, imbricate, dull red, $\frac{1}{3}$ to $\frac{1}{2}$ as long as petals. Petals 4, ovate-oblong, concave, reflexed, $2\frac{1}{2}$ lines long, $1\frac{3}{4}$ lines wide, tinged with red; pedicels 2 to 3 lines long; bracts small, broadly ovate, concave. Stamens 12 to 24, inserted round a fleshy flattened yellowish disk; filaments equalling the petals in length; anthers 2-celled, oblong, basifixed, introrse. Perfect flowers solitary, pedunculate. Calyx and corolla similar to male. Stamens mostly or all barren. Ovary subglobose, compressed, glabrous; 2 to 3-celled, cells 1-ovuled, ovules pendulous, one or two of the cells usually barren; styles 2 or 3, distant, short; stigmas peltate, red. Fruit a drupe.

Habitat: NATAL: In woods, coast districts, to at least 2,000 feet above sea level. Inanda, 1,800 feet alt., September, *Wood*, No. 1148; near Durban, 100 feet alt., November, *Wood*, No. 8644.

The genus Sclerocarya contains 4 species only, of which two are natives of Madagascar, one of Abyssinia, and the above described species, which has been found in Natal and Transvaal only. The generic name is derived from two words meaning "hard" and "Walnut." The fruit is about the size, when ripe, of a small hen's egg, is usually laterally compressed, and is yellow or greenish yellow. The small quantity of pulp between the outer skin and the kernel, has somewhat the flavour of the Mango, but is much more acid; its scent is not unpleasant, but it is disappointing to the taste. The fruits are used by the natives of Amatonga-land for making an intoxicating drink. The wood is of little value, but is used by the natives for making utensils of different kinds, and some part of the tree is used as an aperient. The native name is "um-Gamo."

Fig. 1, branchlet with leaves and female flowers; 2, same with male flowers; 3, male flower; 4, stamen; 5, longitudinal section of female flower; 6, fruit; 7, cross-section of same; *except Figs 1, 2, 6, all enlarged.*

PLATE 308.

DAIS COTINIFOLIA, Linn. (Sp. Pl. Ed. II. 536).
Natural Order, THYMELIACEAE.

A shrub, or small tree, with dark brown tough bark. Leaves opposite, petiolate, exstipulate, ovate to oblong-ovate, margins entire, acute or obtuse at apex, tapering to base, dark green with conspicuous veins above, pale and with prominent veins beneath; 1½ to 3 inches long, 1 to 1½ inch wide; petiole 3 lines long, channelled above. Flowers pink, in globose, terminal, long peduncled heads, surrounded by an involucre composed of 4 bracts, the two outer ones largest, very broadly depressed-ovate, two inner similar, but smaller; all coriaceous. Receptacle flat, pitted, margins of the pits bristly. Perianth tube cylindrical, gradually widening a little below the throat, 1¼ inch long, ½ line wide in centre, densely silky villous; limb 5-lobed, lobes narrow oblong, spreading; 5 lines long, 1 to 1½ line wide. Stamens 10, in two series, 5 in throat of tube, 5 a little below, all exserted; filaments filiform; anthers oblong, 2-celled, basifixed. Ovary superior, 1-celled, 1-ovuled, very villous, seated in a membranous tubular or cup-shaped, and irregularly dentate disk. Style slender, shorter than stamens; stigma globose capitate, green, not reaching throat of perianth. Fruit dry, enclosed in base of the persistent perianth, pericarp membranous.

Habitat: NATAL: Midlands and upper districts. Liddesdale, 4,000 to 5,000 feet alt., *Wood*.

Drawn and described from a plant which flowered in the Botanic Gardens, November, 1902, *Wood*, No. 8699.

This genus contains 7 species only, 3 of which are South African, 2 from Madagascar, and 2 whose habitat appears to be unknown; the above described species is the only one known to exist in Natal, and is also found near Barberton. When in flower the plant is very handsome, and is found in cultivation in Europe, having been introduced from the Cape in 1776. The flowers are sweetly scented, and are apparently dimorphic; a figure of it appears in the "Botanical Magazine," Vol. V. p. 147, where the styles are shown long exserted; and in one specimen in the Colonial Herbarium they are so, but in the specimen from which the drawing was made the stamens are long exserted, and the style is included, remaining within the perianth tube until the flower withers. This plant has flowered in the Garden for several years, and produces seeds regularly.

Fig. 1, flower; 2, upper portion of perianth opened showing insertion of stamens; 3, stamen; 4, ovary and disk; 5, style and stigma; 6, longitudinal section of fruit; *all enlarged.*

Dais cotinifolia, *Linn.*

Dalbergia obovata, *E.M.*

PLATE 309.

DALBERGIA OBOVATA, E. Meyer (Fl. Cap. Vol. II., p. 265).
Natural Order, LEGUMINOSAE.

A wide climbing unarmed shrub with white flowers. Bark greyish, glabrous. Leaves alternate, unequally pinnate, exstipulate; common petiole, 3 to 6 inches long, brown velvetty, swollen at base. Leaflets 2 to 4 on each side, irregularly alternate, oblong-ovate or obovate, margins entire, emarginate at apex, rounded at base, dark green and shining above, pale and dull beneath; 1½ to 4 inches long, 1 to 2 inches wide; petioles 2 to 3 lines long, velvetty; terminal leaflet similar to the others, but a little larger, its petiole nearly an inch long, swollen in upper portion. Inflorescence paniculate, the branches of the panicle corymbose, velvetty pubescent. Calyx gamosepalous, campanulate, 5-fid pubescent, 3 lines long, the two upper teeth connate almost to apex, obtuse, lateral ones smaller, lowest longest, acute. Corolla papilionaceous, white; vexillum oblong, alae narrow oblong, carina petals connate above, free below; all clawed. Stamens 10, monadelphous, included, the staminal tube split to base; anthers similar, ovate, 2-celled. Ovary superior, stipitate, 2 ovuled, style short, stigma obtuse. Legume oblong or broadly lanceolate, flat, acute or obtuse at apex, tapering at base to a short stipe, strongly net-veined, rusty pubescent; 1½ to 2 inches long, 6 to 7 lines wide, 1 or 2-seeded. Seeds compressed, subreniform, brown, 3½ lines by 2¼.

Habitat: NATAL: At margins of woods all over the colony. Inanda, *Wood*; near Durban, 150 feet alt., *Wood*; Qudeni, Zululand, 6,000 feet alt., *Davies*, No. 90.

Drawn and described from plants gathered near Durban.

A stout shrub, climbing by means of hooked depauperated twigs or branchlets, it is often found in company with *D. armata*, which is described in "Natal Plants," Vol. I., plate 79. It is easily distinguished from the other two South African species by its larger and fewer leaflets. It is known to the natives as Manyenyaan or Panhlas, and they calcine the bark and use the ashes for mixing with their snuff. The galls shown in the drawing are very curious, and so far as we are aware are found on this species only.

Fig. 1, flower; 2, calyx opened; 3, vexillum; 4, carina; 5, ala; 6, staminal tube opened; 7, ovary style and stigma; 8, legume; 9, ovule; 10, insect gall. Fig. 8 *natural size*, remainder *all enlarged.*

PLATE 310.

AMARANTUS SPINOSUS, Linn. (Fl. Brit. India, Vol. IV., p. 718).
Natural Order, AMARANTACEAE.

Herbaceous, annual. Rootstock, pink. Stems erect or spreading, glabrous and shining; 1 to 2 feet long, green, or sometimes coloured reddish, especially in axils of the leaves. Spines axillary, pungent, $\frac{1}{4}$ to 1 inch long or more. Leaves alternate, petiolate, exstipulate, ovate to oblong-ovate, tapering to an obtuse apex, cuneate at base, margins entire, undulate, veins pinnate, pink, prominent beneath, sunk on upper surface, which has usually two rows of dull greyish green markings, which form two sides of a triangle, the angle pointing to apex of the leaf, glabrous; 1 to 4 inches long, $\frac{3}{4}$ to 2 inches wide; petiole 1 to 3 inches long, deeply channelled above, dull pink. Flowers unisexual, small, in small axillary clusters on lower portion of the stem, or in densely flowered spikes composed of numerous clusters in upper portion, the spikes erect or drooping, the female flowers in lower portion of the spike, male flowers in upper portion. Bracts setaceous from a broad base, longer than sepals, with dark green keel. Sepals of female flowers 5, ovate apiculate, of male flowers ovate acuminate. Stamens in male flowers 5, filaments connate at base, anthers oblong, 2-celled. Styles in female flowers short or 0; stigmas 3, subulate. Ovary 1-celled, 1-ovuled. Fruit 2-beaked, splitting across the middle (circumscissile). Seeds small, orbicular, compressed, black and shining.

Habitat: NATAL: Coast and Midlands, near Durban, 100 feet alt., November, *Wood*, 1872.

Drawn and described from specimens gathered near Durban, November, 1903.

This genus contains 40 to 50 species, many of which are well known in cultivation. In Natal we have 3 species only, all troublesome weeds; the one here described is now quite naturalised in the colony, and is known in most tropical countries. It was introduced into Natal most probably about the time of the Zulu war, and is a most obnoxious weed, for two reasons; first, on account of the abundance of seed produced, even in the early stages of its growth, and next by its sharp spines, which make it unpleasant to handle. All our species are known to the natives as Imbuya, and the leaves and young stems of at least two of the species are boiled and eaten as a vegetable.

Fig. 1, bract; 2, female flower; 3, male flower; 4, utricle; 5, seed; *all enlarged.*

Amarantus spinosus, *Linn.*

Richardsonia pilosa, *H.B.& K.*

PLATE 311.

RICHARDSONIA PILOSA, H. B. & K. (Fl. Trop. Africa, Vol. III., p. 242, sub-Richardia scabra, St. Hil).

Natural Order, RUBIACEAE.

A many stemmed procumbent branching herb, with heads of small white flowers. Stems elongate, copiously branching, reaching to 2 to 3 feet or more long, terete, densely hispid, often reddish coloured. Leaves opposite, subsessile, stipulate, oval to ovate or obovate, acute at apex, gradually tapering at base to a short channelled petiole, densely hispid on both surfaces, each hair springing from a semi-globose swollen base, margins entire and ciliate; 1¼ to 2¾ inches long, including the short petiole, ½ to 1¼ inch wide, veins pinnate and prominent beneath. Stipules of 2 to 5 bristles on each side, rising from a broad base, which is connate with the petiole. Inflorescence in axillary and terminal heads, each head subtended by 2 to 5 floral leaves, which are subrotund, quite sessile, 5 to 7 veined at base, hispid like the true leaves, and unequal in size, the largest 1 inch by 10 lines. Calyx gamosepalous, tube ovoid or obovoid, densely hispid, 1 to 2 lines long, limb deeply 5 to 6 lobed, lobes ciliate, shorter than the calyx tube, spreading, dark green. Disk annular, small. Corolla gamopetalous, tube funnel-shaped, glabrous, white, of thin texture, limb 4 to 6-lobed, lobes erect, finely pilose with scattered hairs. Stamens 4 to 6, inserted at mouth of tube, just below the sinus; filaments filiform, half as long as corolla lobes; anthers oblong, 2-celled, dorsifixed. Style filiform, longer than stamens, shortly 3-cleft, stigmas 3, subcapitate. Ovary inferior, hispid, 3-celled, cells 1-ovuled. Fruit 3-coccous, cocci separating at maturity, indehiscent.

Habitat: NATAL: Coast and Midlands, common, near Durban, November, *Wood*, No. 1392.

Drawn and described from specimens gathered near Durban, January, 1903.

A troublesome weed. Originally a native of Tropical America, it has gradually spread to other tropical and subtropical countries, and was most likely introduced into Natal about the time of the Zulu war, and since that time it has spread almost all over the colony. In the "Flora of Tropical Africa," published in 1877, it is described under the name of Richardia scabra, but the name Richardia being pre-occupied by a genus of Aroideae, the name was altered to *Richa dsonia scabra*, but, according to the "Genera Plantarum," its proper name is as given above. Baron Mueller says of it: "From Mexico to Brazil. As an herb for pastures and hay-crop appreciated in localities with sandy soil. It has spread over the Southern States of North America."

In Natal it is not generally known as a pasture plant, but it is a great nuisance amongst grass on lawns, and is very difficult to eradicate when once it has obtained a footing, as it has long roots, and bears seeds in abundance. I am informed by Mr. R. Beningfield that not only cattle and horses, but also rabbits and fowls are extremely fond of it. Whether it would yield a heavy crop or not is somewhat doubtful. The roots are emetic, and have been used at Home under the name of "White Ipecacuana," but have now been superseded by the true drug.

Fig. 1, flower; 2, calyx; 3, corolla opened; 4, style and stigma; 5, coccus; *all enlarged.*

PLATE 312.

LORANTHUS DREGEI, E. & Z. (Fl. Cap. Vol. II., p. 575).
Natural Order, LORANTHACEAE.

A strong growing parasitical shrub; young twigs green, with minute scaly ferruginous pubescence, older dark coloured, glabrous. Leaves opposite or sub-opposite, petiolate, elliptic-oblong, obtuse at both ends, margins entire; coriaceous, veins pinnate, immersed; 2 to 3½ inches long, ¼ to 1½ inch wide, minutely punctate, almost glabrous in all stages; petiole ⅛ to ½ inch long, thickened. Peduncles thickly scattered on the older and leafless branches, more sparingly on the terminal leafy portion, 1 to 4-flowered; bracteoles obliquely cup-shaped, ciliate with white hairs. Calyx tubular, 2 to 2½ inches long, truncate, densely hirsute. Corolla 1½ to 2¼ inches long, tube densely covered with long silky hairs, orange-red, limb 5-lobed, lobes linear, channelled, yellow-green, twice as long as tube. Stamens 5, opposite corolla lobes and inserted on them ¼ inch above the sinus; filaments filiform, shorter than corolla lobes, anthers linear, basifixed, 2-celled, cells mucronate. Ovary inferior, 1-celled, 1-ovuled; style filiform, longer than corolla-lobes, stigma clavate, 2-fid at apex, green. Berry oblong, tapering to an obtuse apex, covered with white silky hairs, and crowned with remains of the calyx tube, dull pink when ripe; 5 lines long, 3 lines wide.

Habitat: NATAL: Near Durban, *Sanderson*; *Gerrard and McKen*; *Wood*, January; near Dumbeni, 3,000 to 4,000 feet alt., March, *Wood*, No. 4467.

Drawn and described from specimens gathered near Durban, January, 1903.

Two species of this genus have already been figured in this work, in Vol. 1., plate 76, *L. Kraussianus* is described, and a short description given of the manner in which these plants are fertilised by birds; and in Vol. III., plate 295, L. quinquenervius is figured and described. In the description of *L. Dregei* in the "Flora Capensis," the pubescence is said to be stellate, and that the pubescence is sometimes long persistent on the under service of the leaves. In the specimens gathered near Durban, the leaves are almost always glabrous, but in the specimen, *Wood*, No. 4467, gathered near Dumbeni, between Mooi River and Weenen, the leaves are very densely stellate pubescent, and this plant was identified at Kew as L. Dregei. On comparing this with *Galpin's* 708, which was gathered near Barberton, we find that so far as the pubescence is concerned, they quite correspond, and *Galpin's* specimen was named at Kew *L. Dregei, E. & Z. var.*, with the remark (see also *L. hirtiflorus, Kl.*) a clerical error for *L. hirsutiflorus*. Both *Wood's* 4467 and *Galpin's* 708 were parasitical on Acacias. The specimen here figured was on Melia azedarach.

Fig. 1, calyx and bract; 2, stamen; 3, style and stigma; 4, cross-section of ovary; *all enlarged.*

Loranthus Dregei, *E.* & *Z.*

Pavetta obovata, *E.M.*

PLATE 313.

PAVETTA OBOVATA, E. Meyer. (Fl. Cap. Vol. III. p. 20).
Natural Order, RUBIACEAE.

A shrub, reaching to 10 to 12 feet in height, and bearing axillary and terminal corymbs of pure white flowers. Bark light-coloured, smooth and glabrous, twigs compressed at nodes. Leaves opposite, petiolate, stipulate, oblong to obovate, bright green, glabrous and shining above, pale and duller below, tapering gradually to the short petiole, obtuse at apex, margins quite entire, scrobiculate in axils of main veins beneath; 2 to 3 inches long, 1 to $1\frac{1}{2}$ inch wide, petiole 1 to 5 lines long. Inflorescence corymbose, dichotomously branching, pedicels 2 to 4 lines long; bracts small, deltoid, early deciduous. Calyx gamosepalous, 1 line long, glabrous, 4-toothed, teeth acute, as long as the tube. Corolla gamopetalous, white, tube $\frac{1}{2}$ inch long, cylindrical, limb 4-lobed, lobes more than half as long as the tube, patently reflexed. Stamens 4, on corolla at throat, filaments very short; anthers, linear-elongate, sagittate, 2-celled. Ovary inferior, 2-celled, cells 1-ovuled; style long, much exserted, stigma clavate, entire or subentire, minutely hispid. Fruit as large as a pea, shining, crowned by the remains of the calyx lobes.

Habitat: NATAL: In Coast bush.

Drawn and described from specimens gathered near Durban, February, 1903, *Wood*, No. 8704.

The genus Pavetta includes 60 or more described species, of which 11 are South African and 27 in Tropical Africa, the remainder scattered in the Eastern Hemisphere, and it is quite probable that both in Natal and in Tropical Africa there are species not yet identified. Pavetta is said, in the "Flora Capensis," to be "the vernacular name of P. indica in Malabar." All the Natal species have white flowers, and some of them are well worth cultivation.

Fig. 1, corolla opened; 2, calyx and ovary; 3, stamen; 4, portion of style and stigma; 5, young fruit; 6, cross-section of ovary; *all enlarged.*

PLATE 314.

SIDEROXYLON INERME, Linn (Sp. Pl., 192).
Natural Order, SAPOTACEAE.

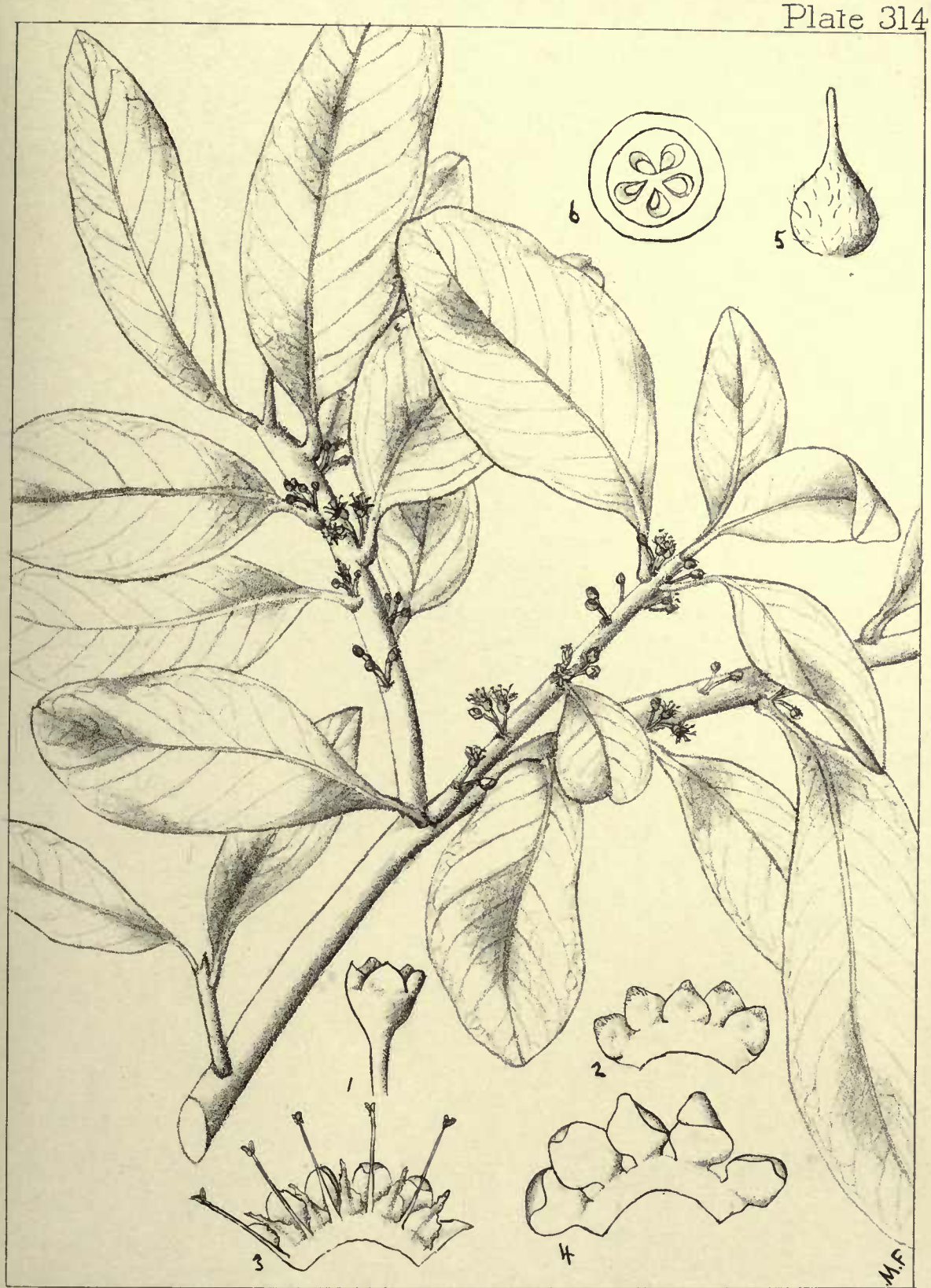
An evergreen tree, 20 to 30 feet high, bearing small greenish-white flowers. Bark, dark coloured, glabrous. Leaves alternate, petiolate, exstipulate, elliptical to ovate or ovato-lanceolate; margins quite entire, a little recurved; obtuse at apex, tapering to the petiole at base, midvein prominent beneath, quite glabrous, coriaceous, dark green and shining above, paler and dull beneath; 2 to $4\frac{1}{2}$ inches or more long, $\frac{3}{4}$ to $1\frac{1}{4}$ inch wide; petiole $\frac{1}{2}$ inch long, thickened. Flowers axillary or scattered on the branchlets, solitary or tufted, pedicelled, pedicels 2 to 3 lines long. Calyx gamosepalous, deeply 5-parted, imbricate, tube very short, 3 lobes exterior, 2 interior, all broadly ovate, entire, erect, the whole calyx 2 lines long, finely and sparingly pubescent. Corolla gamopetalous, 5-lobed, $1\frac{1}{2}$ line long, lobes ovate, equalling the tube, glabrous, greenish-white. Stamens 5, alternating with 5 barren ones, the perfect ones opposite corolla lobes, filaments nearly twice the length of corolla lobes, linear; anthers oblong, 2-celled, dorsifixed, opening outwards; staminodes alternate with the corolla lobes, petaloid, ovate, membranous, equalling lobes of corolla. Ovary superior, ovate, 3 to 5-celled, cells 1-ovuled, style a little longer than ovary, stigma obtuse.

Habitat: NATAL: Coast Forests. Bluff, March, 200 feet alt., *Wood*, No. 8703.

Drawn and described from *Wood's* 8703.

The genus Sideroxylon includes more than 60 species, widely scattered in different parts of the world. In South Africa three species are known, but the above described one is the only one found in Natal. There are also several species in Tropical Africa. All of them are trees, and the wood of many of them is valuable. That of S. inerme has been used in Natal for fencing posts, boat building, and other purposes, and is known as "White Milkwood." The tree seems to be confined to the coast districts, and is frequently met with close to the sea. The natives call it um-Hlahla, and use the bark medicinally as an astringent. The ovary is normally 5-celled, but is often found with 3 or 4 cells only.

Fig. 1, calyx; 2, same opened, showing stamens and staminodes; 4, corolla opened, stamens and staminodes removed; 5, ovary, style and stigma; 6, cross-section of ovary; *all enlarged.*



Sideroxylon inerme, *Linn.*

Niebuhria rosmarinoides, *Sond.*

PLATE 315.

NIEBUHRIA ROSMARINOIDES, Sond. (Fl. Cap., Vol. I, p. 60).
Natural Order, CAPPARIDEAE.

A much branched shrub, 6 to 10 feet in height. Bark, light coloured, glabrous. Leaves alternate, petiolate, stipulate, 3 or sometimes 5-foliolate; common petiole $\frac{1}{4}$ to $\frac{1}{2}$ inch long, secondary ones 1 line long, channelled above; leaflets linear, entire, mucronate, glabrous, channelled above, midrib very conspicuous beneath, terminal leaflet 1 to $2\frac{1}{2}$ inches long, 1 line wide, lateral ones 1 to $1\frac{3}{4}$ inch long. Stipules minute, lanceolate, deciduous, dark brown. Flowers solitary, axillary, pedunculate; pedicels $\frac{3}{4}$ to 1 inch long. Calyx 4-parted, tube short, lobes ovate or obovate, ciliate, green, valvate in bud, strongly reflexed at maturity, concave, deciduous, 3 lines long Petals 4, oblong, acute, of delicate texture, about half the length of the calyx lobes, yellow-green, deciduous, inserted in throat of calyx. Stamens about 16, inserted on a short torus, filaments more than twice as long as the calyx; white; anthers oblong, 2-celled. Ovary on a long stalk, which reaches to 1 inch in length, cylindrical, 1-celled, several ovuled. Style 0, stigma depressed. Fruit a berry, oval, but often constricted in the centre, from two to 3 or 4 seeded.

Habitat: NATAL: Coast districts. Near Verulam, 500 feet alt., July, *Wood*, in Colonial Herbarium, No. 7626; near Sydenham, March, *Wood*, No. 8705.

Drawn and described from *Wood's* 8705.

The genus Niebuhria, according to the "Index Kewensis," includes 10 species, of which 3 are found in Natal, 3 others in South Africa, 3 in East Indies, and 1 in Madagascar. We are not aware that any of them have useful properties of any kind, and all the Natal species are small shrubs.

Fig. 1, longitudinal section of flower; 2, flower opened; 3, a stamen; 4, ovary with its stipes; 5, longitudinal section of ovary; *all enlarged.*

PLATE 316.

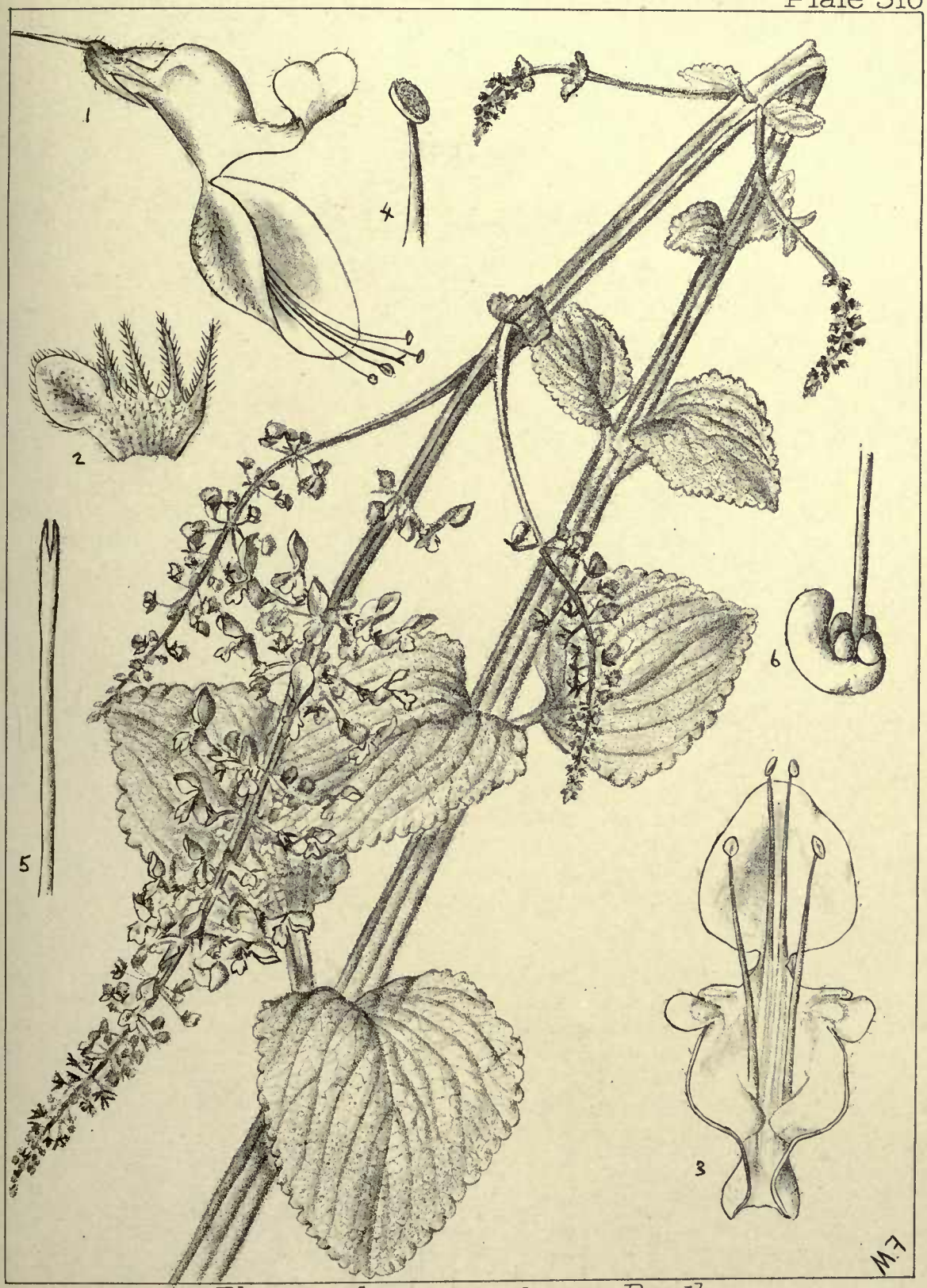
PLECTRANTHUS TOMENTOSUS, Bth. (ex. E. M. Comm. Pl. Afr. Austr. 229).
Natural Order, LABIATAE.

An undershrub, reaching to 4 or 5 feet in height, much branched, leafy in the younger portions only. Stem and branches tetragonous, and deeply furrowed, densely tomentose, and thickly covered with sessile or subsessile globose amber coloured glands; upper portion dark purplish. Leaves opposite, petiolate, exstipulate, densely and softly tomentose and glandular beneath, like the stem, veins and veinlets very prominent on under surface, visible and sunk on upper surface, which is less densely tomentose than the under one, and without glands; cordate at base, margins coarsely and regularly crenate, slightly recurved; 2 to $3\frac{1}{2}$ inches long, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches wide; petiole $\frac{1}{2}$ to $\frac{3}{4}$ inch long, thick, and very deeply channelled above, tomentose and glandular. Inflorescence a racemose panicle, the whorls 6 to 8 flowered. Calyx gamosepalous, 5-lobed, tube short, campanulate, upper lobe broadly ovate or subrotund, remainder lanceolate, the whole calyx 1 to $1\frac{1}{4}$ line long, pilose with jointed hairs, purple and with amber-coloured sessile or subsessile globose glands. Corolla gamopetalous, tube strongly compressed, widening to throat, gibbous on upper side, limb 2-lipped, upper lip erect, 4-lobed, two central lobes largest, rounded at apex, lateral lobes narrower and shorter, lower lobe entire, declined, elongate, elliptical from a narrowed base, the whole corolla 5 lines long, lilac, the upper lip dark lined, lower concolorous, and with the upper lip having a few dark glands on outer surface. Stamens 4, declinate, longer than corolla, exserted. Filaments, toothless; anthers 2-celled, at length confluent. Style 1, filiform, longer than stamens, minutely 2-fid, teeth ovate. Disk expanded on the lower side into a lobe which is longer than the ovary. Nuts minute.

Habitat: NATAL: Coast and Midlands. Inanda 2,000 feet alt., May, *Wood*, No. 488; Botha's Hill, October, 2,500 feet alt., *Wood*, No. 4775; near Durban, March, *Wood*.

This is the second species of this genus figured in this work, the other being P. saccatus, Plate 85, Vol. 1. The plant here described is not so handsome as P. saccatus, but is well worth cultivation. It is ornamental only, and I cannot learn that the natives have any distinctive name for it, nor that they use it in any way.

Fig. **1**, flower; 2, calyx opened; 3, corolla opened: 4, a stamen; 5, style and stigma; 6, ovary and disk; *all enlarged*.



Plectranthus tomentosus, *Benth.*

Dioscorea malifolia, *Baker*.

PLATE 317.

DIOSCOREA MALIFOLIA, Baker (Fl. Cap., Vol. VI., p. 248).
Natural Order, DIOSCOREACEAE.

A dioecious climbing plant, with yellow flowers. Rootstock woody, roots tough. Stems slender, wide climbing, glabrous. Leaves alternate, petiolate, blade broadly ovate, quite entire, truncate or cordate at base, mucronulate at apex, 7-nerved at base, 5 of the nerves reaching the apex of the leaf, the outer one at each side only reaching to $\frac{2}{3}$ the length of the blade, the whole leaf glabrous and shining, dark green above, lighter beneath; petiole $\frac{3}{4}$ to $1\frac{1}{4}$ inch long. Flowers of the staminate plant in fascicled racemes, 1 to 3 inches long, the rhachis straight or curved; pedicels short, ascending, bracts small, ovate-acuminate. Perianth less than 1 line long, yellow, tube very short, segments obtuse. Stamens 6, opposite lobes of perianth; pistillate flowers in lax racemes, 3 to 6 inches long, barren stamens 6, minute. Ovary inferior, triquetrous, glabrous, two to three times longer than the perianth, 3-celled, cells 2-ovuled, ovules superposed; styles 3, very short, recurved, stigmas obtuse. Capsule emarginate, triquetrous, $\frac{3}{4}$ to 1 inch long, 6 to 8 lines long, including the wings, which are 2 to 3 lines wide. Seeds ovate, compressed, with a sub-basal wing, half or more the length of the seed, and extending as a very narrow line all the way round.

Habitat: NATAL: Inanda, 1,800 feet alt., *Wood*, No. 753; Northdene Herb., *Normale*, No. 1035; *Sanderson*, No. 232; *Cooper*, No. 3247; *Gerrard*, No. 444.

Drawn and described from the specimens gathered near Durban, March, 1903.

This is the second species of Dioscorea figured in this work, the other being *D. crinita, Hook* (Plate 17, Vol. 1). The seeds examined were not quite ripe, but the wing in all those seen was as is stated in the description and shown in the drawing. The native name of the plant is in-Tana, and the tough roots are split and used to tie round the shaft of the assegai where the iron blade is inserted into it to prevent splitting.

Fig. 1, female flower; 2, longitudinal section of same; 3, perianth lobe, showing insertion of stamen; 4, ovary, styles and stigmas; 5, raceme of fruit; 6, seed showing wing; 7, longitudinal section of male flower; 8, stamen of male flower. *Fig. 5, natural size, remainder enlarged.*

PLATE 318.

TRIUMFETTA PILOSA, Roth. (Fl. Cap., Vol. I, p. 227).
Natural Order, TILIACEAE.

An undershrub, 3 to 6 feet high, bearing yellow flowers, and densely stellate tomentose in all parts, except the stamens and style. Leaves alternate, petiolate, stipulate, ovate-oblong, acuminate, the lowest 3-lobed, remainder subcordate at base, gradually smaller upwards, the uppermost very small and lanceolate, all unequally serrate; dull green above, much lighter coloured beneath, 3-5-veined at base, lowest ones 6 inches long, 4 inches wide, uppermost $\frac{3}{4}$ inch by $\frac{1}{4}$ inch; petiole of lower leaves 2 to 3 inches long, terete; stipules subulate, 4 to 5 lines long. Peduncles clustered at nodes, short, branched, the branches very short, 3-flowered; pedicels 1 to 2 lines long, bracteate at base, bracts linear, slightly longer than pedicels. Sepals 5, linear, apiculate. Petals 5, oblong-spathulate, hairy at base only, shorter than sepals. Stamens 10, inserted inside the disk, equalling the petals; filaments with transverse markings; anthers oblong, 2-celled. Disk cupular, pilose above, 5-glandular beneath. Ovary superior, 4-celled, cells divided by a false parietal vertical dissepiment, each cell 2-ovuled, ovules collateral. Capsule globose, hispid, thickly covered with hooked spines which are pilose in the lower portion only, the whole capsule including the spines $\frac{1}{2}$ inch or more in diameter.

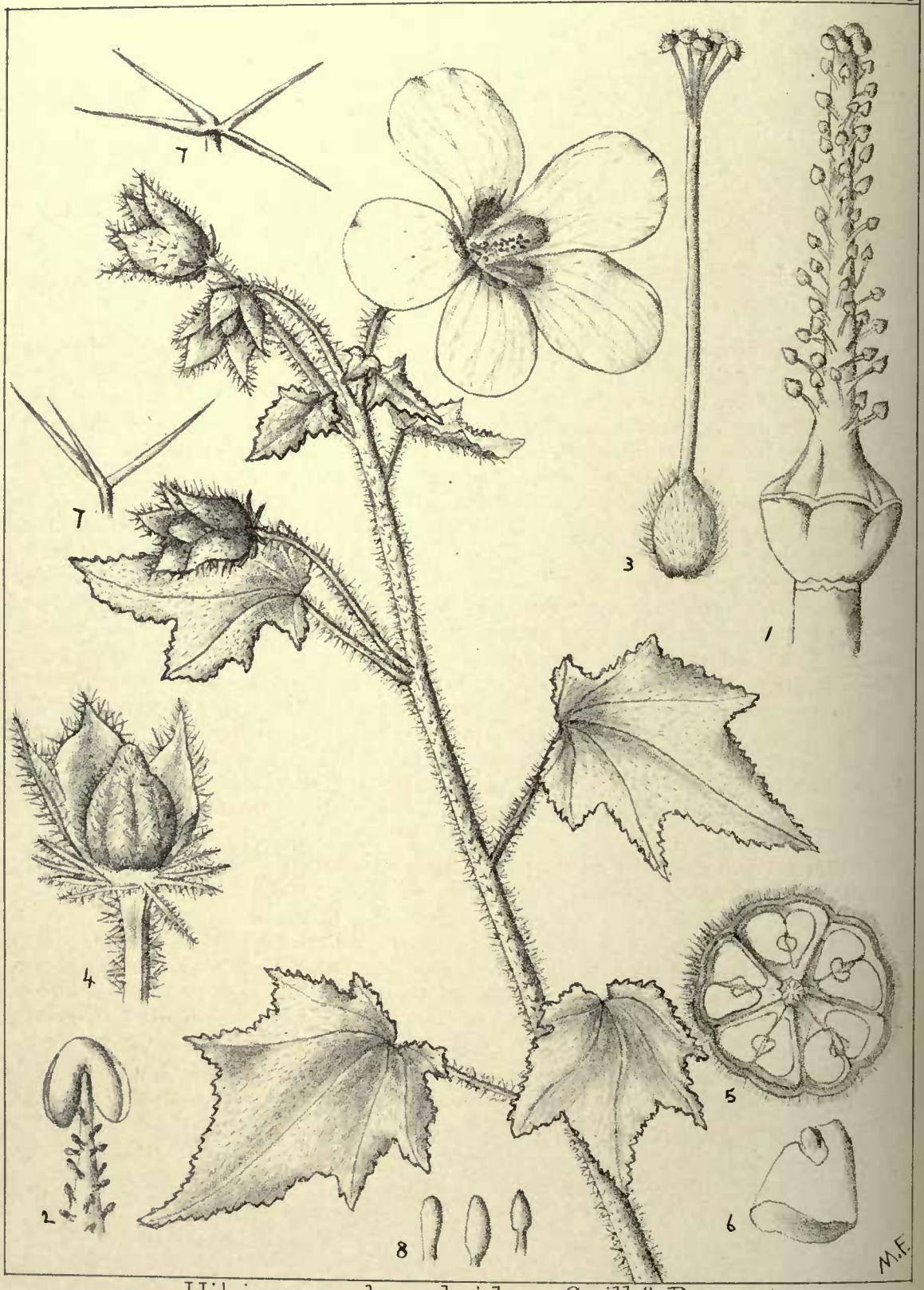
Habitat: NATAL: Coast and Midlands. Inanda, 1,850 feet alt., April, *Wood*, No. 526; near Durban, 150 feet alt., April, *Wood*.

Drawn and described from specimens gathered near Durban, April, 1903.

This is the second species of Triumfetta figured in this work, the other being *T. effusa*, Plate 252, and the remarks under *T. effusa* will in the main apply to this plant also, but its capsules are larger than those of *T. effusa*, and would most likely be even more troublesome to sheep farmers than those of that species. It is also a native of India, Ceylon, Abyssinia, and Tropical India.

Fig. 1, calyx lobe; 2, corolla lobe; 3, flower, calyx, and corolla removed; 4, a stamen; 5, cross-section of capsule; *all enlarged.*

Triumfetta pilosa, *Roth.*



Hibiscus physaloides, *Guill & Per.*

PLATE 319.

HIBISCUS PHYSALOIDES, Guill & Per, (Fl. Cap., Vol. I., p. 172).
Natural Order, MALVACEAE.

A tall herbaceous branching plant, bearing large showy flowers, which are deep red at base, and yellow in upper portion. Stem 3 to 6 feet in height, much branched above, terete, both stems and branches hispid, with short sub-stellate white hairs, interspersed with longer simple ones which spring from a swollen base, and are occasionally substellate. Leaves alternate, petiolate, stipulate, cordate at base, 5-angled or 5-lobed, the lobes acuminate or cuspidate, the interspaces crenate; very finely pubescent above, more densely so beneath, the lower ones $3\frac{1}{4}$ to 4 inches long, 4 to 5 inches wide, the uppermost very small; petiole 1 to 3 inches long, substellately hairy like the stem and branches. Flowers solitary, axiliary, pedunculate, forming a false raceme at the ends of the stem and branches. Involucel of 10 filiform spreading leaflets, clothed with similar hairs to those of the stem and branches. Calyx gamosepalous, 5-cleft to the middle, tube campanulate, lobes deltoid, acute, 5-veined, the whole calyx $\frac{3}{4}$ inch long, enlarging in fruit, shaggy externally, pubescent within. Petals 5, more than twice as long as the calyx, obovate, twisted in æstivation, veiny, yellow in upper portion, deep red at base. Staminal column minutely 5-toothed at apex, bearing numerous stamens on the outer surface; dilated at base, covering the ovary and adnate to the petals. Anthers 1-celled. Ovary 5-celled, cells many ovuled. Capsule enclosed in the persistent calyx, densely hispid; 5-celled, many seeded. Seeds glabrous.

Habitat: NATAL: Coast and Midlands. Umzinyati, 1,000 feet alt., March, *Wood*, No. 926; near Durban, April, *Wood*.

A tall annual, frequently found about cultivated ground; the flowers are rather showy, but when the plant is in flower the upper branches are bare of leaves and rather ragged, the hairs are somewhat unpleasant to the touch. A native also of Tropical Africa and the Canary Islands. The natives do not appear to have any specific name for it, nor is any part of the plant used so far as we are aware.

Fig. 1, base of calyx, staminal tube, anthers and stigmas; 2, a stamen; 3, ovary, style and stigma; 4, portion of involucre and calyx with ovary; 5, cross-section of ovary; 6, ovule; 7, stellate hairs; 8, hairs from filament; *all enlarged.*

PLATE 320.

KALANCHOE LONGIFLORA, Schlechter, MSS.
Natural Order, CRASSULACEAE.

A succulent perennial, with yellow flowers. Stems quadrangular, glabrous, elongate in flower, reaching to 18 to 24 inches long, leafy below, lower nodes $\frac{3}{4}$ to 1 inch, upper ones 2 to 3 inches apart. Leaves opposite, decussate, exstipulate, subsessile, ovate to oblong or oblong-ovate, tapering to base, obtuse at apex, margin coarsely crenato-serrate in upper and medial portions, entire below; thick, fleshy, glabrous, veins immersed; the lowest ones 3 inches long by $2\frac{3}{4}$ inches wide, upper ones 1 to $1\frac{1}{2}$ by $\frac{1}{2}$ to $\frac{3}{4}$ inch. Inflorescence cymoso-paniculate, lower branches 2 to 3 inches long, upper gradually shorter, each division with a depauperated leaf or bract at its base; pedicels $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Calyx 4-parted, sepals minute, acute. Corolla gamopetalous, salver-shaped, 4-lobed, tube swollen at base, 4-angled, greenish-yellow, 7 to 8 lines long, lobes ovate, spreading, 2 lines long, yellow. Stamens 8, on corolla tube, and adnate to it, those opposite the corolla lobes free only at throat, the alternate sub-sessile scarcely exserted. Anthers ovate, 2-celled, basifixed, and having a minute gland at apex. Squamae 4, linear, 2 lines long. Carpels 4, elongate. Styles linear, thickly covered with minute tubercles; stigmas obtuse. Follicles 5 to 6 lines long, many seeded.

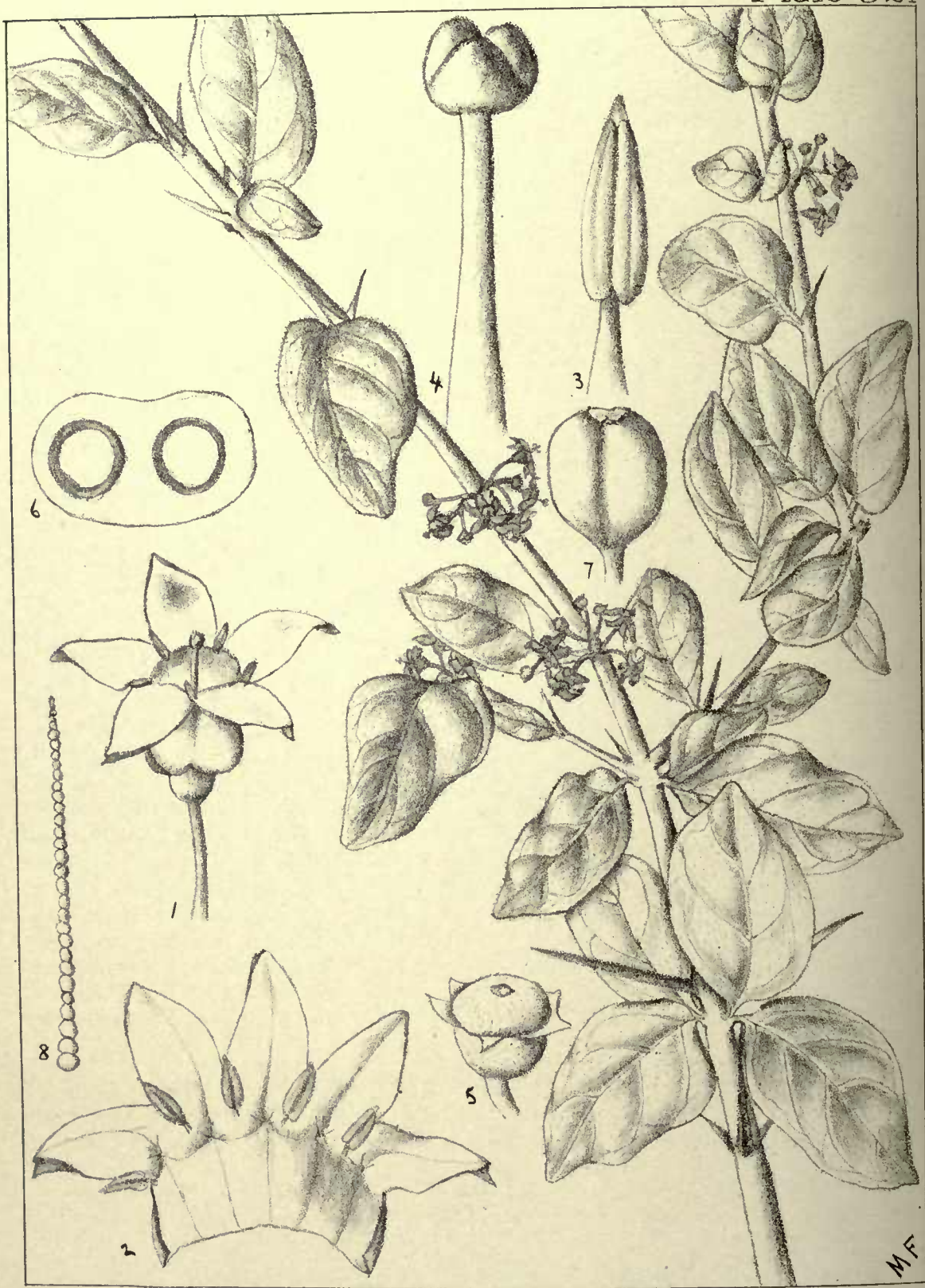
Habitat: NATAL: Between Greytown and Weenen, near the brook Dumbeni, about 3,000 to 4,000 feet alt., April, *Wood*, No. 4439.

Drawn and described from a plant growing in Botanic Gardens, Durban, which was brought from Dumbeni by J. M. Wood in 1891.

A rather ornamental plant, suitable for rockwork and similar situations, where it forms clumps of 3 feet or more in diameter, and bears its flowers profusely during the summer months. It is a somewhat rare plant, and the natives have no distinctive name for it.

Fig. 1, flower; 2, calyx; 3, corolla opened, showing insertion of stamens; 4, a stamen; 5, carpels and squamae; 6, cross-section of carpel; *all enlarged.*

Kalanchoe longiflora, *Schiechter*.



Plectronia spinosa, *Klotzsh.*

PLATE 321.

PLECTRONIA SPINOSA, Klotzsch. (Fl. Cap., Vol. III., p. 18).
Natural Order, RUBIACEAE.

A shrub, or small tree, reaching to 20 feet in height, and armed with sharp spines, which are decussate on the stem and branches, and $\frac{3}{4}$ to $1\frac{1}{2}$ inch long. Branches spreading, greyish-white, glabrous, terete, younger ones pubescent. Leaves opposite, petiolate, stipulate, fascicled on short arrested branchlets, or solitary, oval, ovate or oblong, obtuse at both ends, or tapering slightly to base, margins entire; minutely pubescent on both surfaces, and with minute pits surrounded by short hairs in angles of veins beneath; 1 to 2 inches long, $\frac{1}{2}$ to $1\frac{1}{4}$ inch wide; petioles 1 to 3 lines long, pubescent. Stipules subulate from a broad base, hirsute, deciduous. Flowers clustered in the axils, green, the clusters from 2, to 10 or 12 flowered, shorter than the leaves; peduncles very short, branched, pedicels 1 to 2 lines long. Calyx gamosepalous, very shortly 5-toothed, tube hemispherical, glabrous. Corolla gamosepalous, 5-lobed, tube very short, sub-cylindrical, lobes oblong, patent, reflexed or revolute, with a few jointed hairs in throat. Stamens 5, alternate with corolla lobes, inserted in throat of corolla, filaments very short; anthers oblong, 2-celled. Ovary inferior, 2-celled, cells 1-ovuled; style short, stigma sub-capitate, 2 or 3 lobed. Fruit a 2-celled berry, crowned with the limb of the calyx, compressed, one cell often abortive.

Habitat : NATAL: Berea, 150 feet alt., October, *Wood*, No. 1726; Berea, July *Wood.*

Drawn and described from specimens gathered on Berea, July, 1903.

The genus Plectronia, according to the "Index Kewensis," includes 36 species, of which 6 are South African, the remainder widely dispersed in the Eastern Hemisphere, and to these one, at least (P. locuples, K. Schum), and probably also others, have been added since the publication of that work.

In the generic description of Plectronia in the "Fl. Capensis," the stigmas are said to be "subcapitate, of 2 approximate lamellae." In our specimens the lobes, can scarcely be called lamellae, and are often sub-globose, and the stigmas are usually 3-lobed, and only occasionally 2-lobed. In a note added by Professor Harvey, he says: "Too nearly allied to Canthium," and I understand that these genera are now united under Plectronia.

The native name of the plant is "um-Pembetu," but I cannot learn that they have any special use for the plant. Mr. Fourcade, in his "Report on Natal Forests," says of it: "Wood fine grained, heavy, yellowish" (Pappe).

Fig. 1, flower; 2, corolla opened; 3, a stamen; 4, style and stigmas; 5, calyx and ovary; 6, cross-section of ovary; 7, fruit; 8, moniliform hair of corolla; *all enlarged.*

PLATE 322.

KNIPHOFIA FIBROSA, Baker. (Fl. Cap. Vol. VI. p. 533).
Natural Order, LILIACEAE.

An herbaceous plant, with pale yellow flowers; old leaves splitting into numerous fibres. Produced leaves 6 to 10 to a stem, narrowly linear, reaching to 2 feet long, 1 to 1¼ line wide, margins strongly recurved, smooth, midrib very prominent beneath. Peduncles slender, as long as the leaves or a little longer. Raceme densely flowered, oblong, 1 to 2 inches long, 1 to 1¼ inch diameter; pedicels very short, less than 1 line; bracts ovate-lanceolate, with fine brown keel, the lowest empty ones ¼ inch long, upper shorter Flowers pale yellow, deflexed; perianth cylindrical, slender, ½ inch long, lobes 6, ovate, 1 line long. Anthers small, oblong, versatile, finally a little exserted, dark brown when dry. Ovary superior, sessile, ovoid, 3-celled, ovules numerous, superposed; style a little longer than the anthers, filiform, stigma capitate. Capsule not seen.

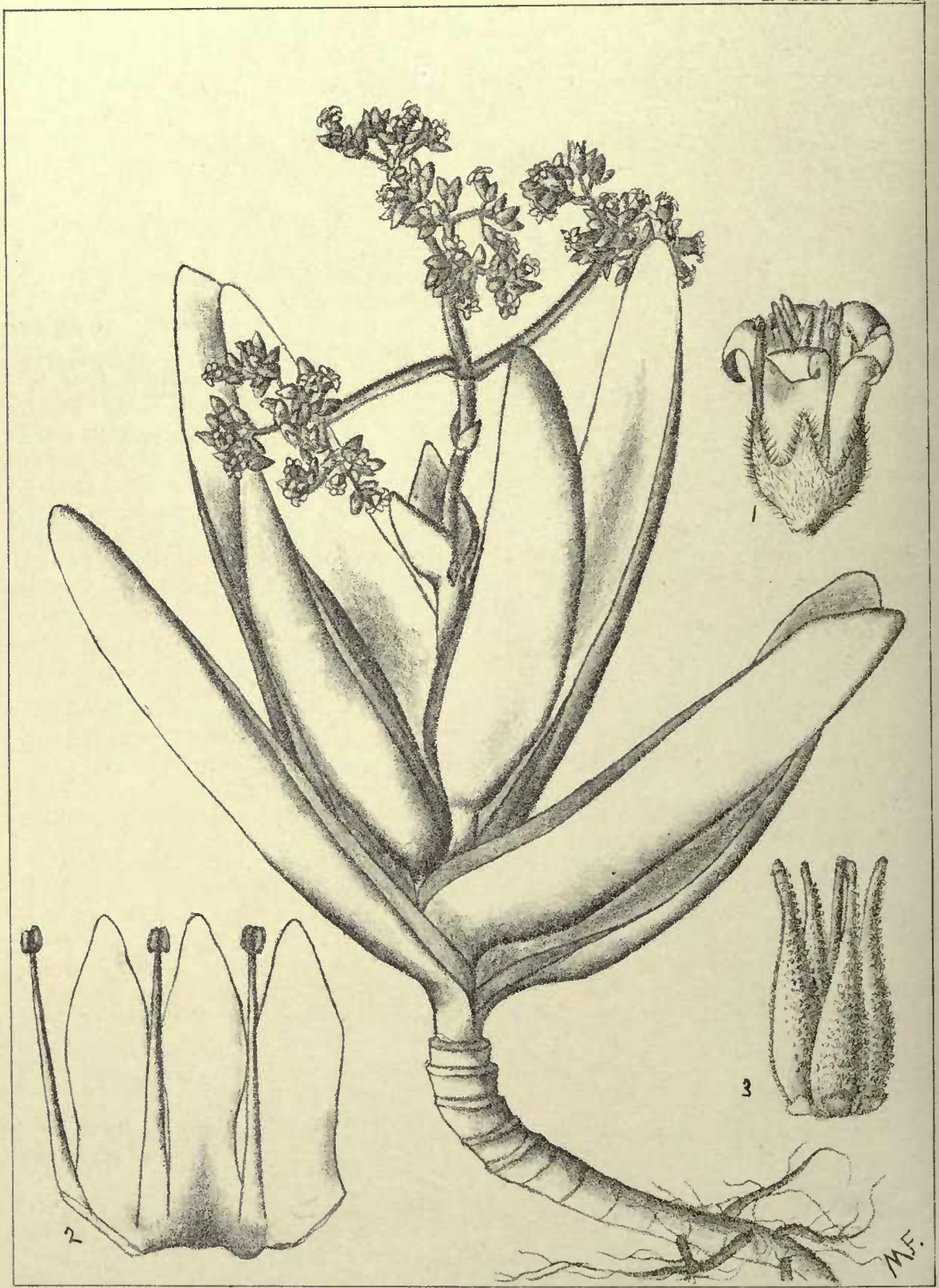
Habitat: NATAL: Mahwaqua Mountain, 6,000 to 7,000 feet alt., *Evans*, 649; Van Reenen, 5,000 to 6,000 feet alt., January, *Wood*, No. 8922.

Drawn and described from Wood's 8922.

Two species of this genus have already been figured and described in this work, viz., *K. multiflora* (Plate 206) and *K. natalensis* (Plate 305). The plant here described is smaller than either, and is a rather pretty species. Some of the measurements here given do not exactly agree with those given by Mr. Baker in the "Flora Capensis," but the plant does not agree with any other species described in that work. Mr. Baker described from Mr. Evans's specimen, which is not in our Herbarium. In a note Mr. Baker says, "Near *K. gracilis*, *Harv.*, and *K. Evansii*, *Baker*." From the former our plant differs in the length of the raceme, and shape and size of the bracts, and from the latter in the shape and size of the bracts and the colour of the flowers.

Fig. 1, flower with bract; 2, corolla opened; 3, stamen, front view; 4, same, back view; *all enlarged.*

Kniphofia fibrosa, *Baker*.



Crassula pallida, *Baker.*

PLATE 323.

CRASSULA PALLIDA, Baker. (*Gard. Chron.* (1874), 1, 786).
Natural Order, CRASSULACEAE.

A low undershrub, with white flowers. Stems short, erect, terete, marked with scars of fallen leaves, reaching to 6 inches or more long. Leaves connate, broadly linear, obtuse, thick, fleshy; 3 to 6 inches long, $\frac{3}{4}$ to $1\frac{1}{4}$ inch broad, 3 to 5 lines thick, glabrous, both surfaces minutely papillose; pale green. Inflorescence corymbose, much branched, with a pair of lanceolate bracts at each fork, peduncles and pedicels densely pilose with white hairs, as also are the bracts and depauperated leaves on the lower portion of the peduncle. Calyx sub-campanulate, 5-lobed, lobes erect, linear-oblong, obtuse, longer than tube, the whole calyx 2 lines long; densely clothed with white, erect hairs. Corolla deeply 5-lobed, lobes oblong, reflexed, obtuse at apex; 3 lines long, white. Stamens 5, alternate with and a little shorter than the corolla lobes; filaments compressed; anthers 2-celled, basifixed. Squamae minute, sub-quadrangular, yellow. Carpels 5, oblong, acuminate, minutely glandular. Follicles many seeded.

Habitat: NATAL: Natal and Zululand. Midland districts. Inanda 1,800 feet alt., June, *Wood*, No. 598; Umbumbulu 1,000 to 2,000 feet alt., August, *Wood*, No. 6479; Zululand, July, *Wood*.

Drawn and described from plants grown in Botanic Gardens, Durban, which were brought from Zululand.

This plant is not uncommon in the midlands of Natal. It is a stiff-looking plant, the leaves being erect and thick; the flowers are small and unattractive, and the plant is of no special value. The only name that the natives appear to have for it is one which they apply to quite a number of plants, namely, *in-Telezi*, meaning I understand a plant which, on account of its succulent nature, does not easily die. It does not appear in the "Flora Capensis."

Fig. 1, flower; 2, portion of corolla opened; 3, carpels and squamae; *all enlarged.*

PLATE 324.

LAGGERA ALATA. Sch. Bip. (Fl. Trop. Africa, Vol. III., p. 326).
Natural Order, COMPOSITAE.

An undershrub with pink flowers, glandular pubescent in all parts. Stem erect, branched, terete, and winged like the branches, the wings leafy, entire, veined. Leaves alternate, upper sessile, lowest petiolate; elliptical or oblong, obtuse at apex, margins serrate, glandular pubescent above, more thickly so beneath, the upper ones decurrent in two stem wings to the next lower node, thus appearing as though the wing was continuous; veins very prominent beneath; the largest leaves, of which there is one only at the base of each branch are 6 to 8 inches or more long, 2 to 3 inches wide, the upper ones very much smaller, oblong to lanceolate, acute; becoming gradually smaller upwards. Inflorescence of large elongated panicles, the branches of the panicle racemose, distant, few flowered, spreading; pedicels 1 to 2 inches long, bearing 1 to 4 minute bracts, and with a depauperated leaf at base. Heads heterogamous, many flowered, $\frac{1}{4}$ to $\frac{3}{4}$ inch diameter. Involucral scales in many series, linear-acuminate, outer shortest, and like the medial ones with squarrose tips; dark green; innermost ones erect, linear, subhyaline, 1-nerved. Receptacle flat, naked, pappilose. Ray florets numerous, filiform, minutely toothed at apex, pistillate; disk florets many, perfect, their corollas tubular, 5-fid. Anthers bi-dentate at base, the lobes adpressed to the filament. Pappus of numerous filiform bristles, which are minutely and very deeply serrate. Achenes pilose, ripe ones not seen; style arms of ray florets filiform, of disk florets linear, obtuse, glandular.

Habitat: NATAL: Inanda, 1,800 feet alt., June, *Wood*, No. 569; near Umzinyati, *Mrs. Edwards*; near Durban, August, *Wood*, No. 9007.

Drawn and described from Wood's 9007.

The genus Laggera contains 10 species only, of which 3, including the one here described, are common to Tropical Asia and Tropical and South Africa; 4 are confined to Tropical Africa, 1 to Tropical Asia, and 2 to Abyssinia. The genus is nearly related to Blumea, but the anthers are not tailed, while in Blumea they are so. None of the species have any economic value, and most of them are mere weeds. This plant differs much in size, according to the situation in which it is grown; in open ground it is rarely more than 2 feet in height, and somewhat robust in habit, while in good soil and slight shade it sometimes reaches to 6 feet or even more, and its branches are slender and elongated.

Fig. 1, leaf and portion of stem; 2, branch of inflorescence; 3, flower head; 4, inner involucral scale; 5, outer involucral scale; 6, ray floret; 7, disk floret; 8, lobe of corolla of disk floret; 9, stamen; 10, stigmas of disk floret; 11, achene; 12, portions of pappus bristle, highly magnified; *except Figs. 1 and 2 all enlarged.*

Laggera alata, *Sch. Bip.*

Ocimum suave, *Willd*.

PLATE 325.

Ocimum suave, Willd. (Fl. Trop. Afr., Vol. V., p. 338).
Natural Order, Labiatae.

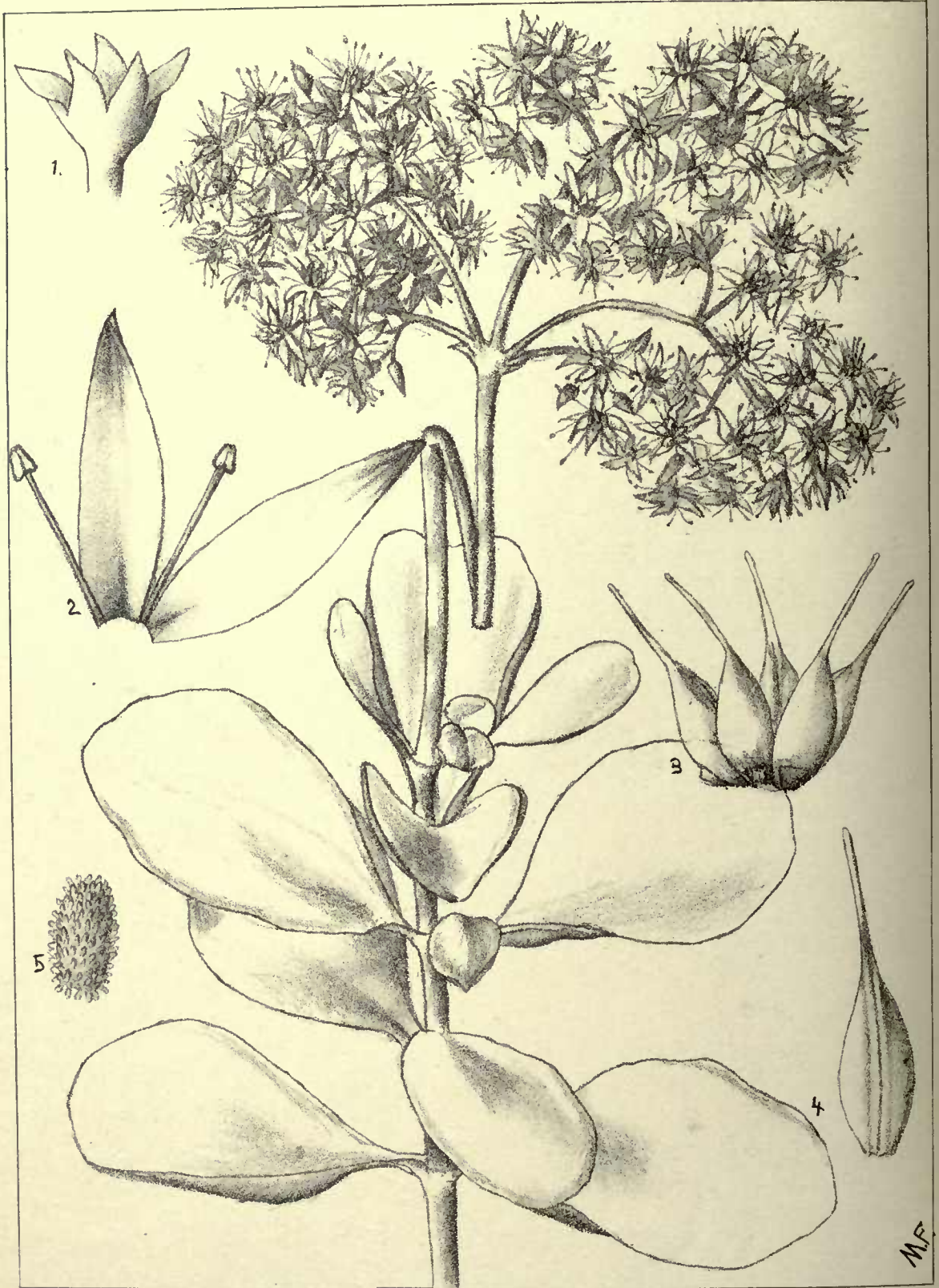
A much branched perennial undershrub, 18 inches to 4 feet high, bearing numerous white flowers, which are sometimes tinged with pink. Stems and branches quadrangular, densely pilose, the hairs jointed. Leaves opposite, petiolate, exstipulate, ovato-attenuate, margins crenato-serrate; 2 to 4 inches long, 2 to 4½ inches wide, pubescent on both surfaces, with jointed hairs; petioles ½ to 1 inch long, pilose like the stems and branches, and with similar hairs. Racemes densely panicled, axillary and terminal, reaching to 6 inches or more long, peduncles, pedicels, and calyx densely pilose and glandular. Calyx gamosepalous, when in fruit ¼ inch long, tube campanulate, upper lobe orbicular, as long as the tube, and decurrent on it, lateral ones minute, subulate, two lower ones connate nearly to apex, pilose and glandular externally. Bracts ovate, acuminate, pilose and glandular. Corolla gamopetalous, a little longer than the calyx, tube short, limb bilabiate, upper lip shortly 4-lobed, lower ovate, reflexed. Stamens didynamous, declinate, inserted on corolla tube, exserted, the two upper ones toothed above the base; anthers 1-celled. Ovary superior, 4-lobed, 4-seeded; style filiform, 2-fid, proceeding from the centre of the ovarian lobes. Disk cup-like, toothed. Seeds small, brown, sub-globose, shining, rugulose.

Habitat: Natal: Near Durban, 150 feet alt., March, *Wood*, No. 1812; Zululand, near Eshowe, 1,500 feet alt., April, *Wood*, No. 3975.

Drawn and described from specimens gathered near Durban, 500 feet alt., May, *Wood*, No. 9040.

The genus Ocimum includes about 60 species, natives of the warm regions of both hemispheres. Of these 43 are found in Tropical Africa, and 8 or 10 in South Africa. Some of the species as *O. basilicum* (Basil) are used in cookery, and others are used medicinally. One species, *O. viride*, a native of Tropical Africa and Asia, has lately come prominently into notice on account of its supposed value in repelling mosquitoes, and it is at least possible that the plant here described may have similar properties. The whole plant is thickly gland-dotted, and powerfully scented even when dry, and flies placed in a bottle with a few capsules of this plant were soon killed, while flies placed in a similar bottle at the same time were liberated three hours afterwards without suffering at all from their imprisonment. Plants will be reared here for experiment during the summer months. The natives use the plant in perfumery, and call it u-Qabukulu.

Fig. 1, flower; 2, bract; 3, jointed hair; 4, corolla opened; 5, stamens; 6, disk and pistil; 7, calyx opened; *all enlarged.*



Crassula multicava, *Lem.*

PLATE 326.

Crassula multicava, Lem. (Illustr. Hortic. IX. (1861) Misc. 40.)
Natural Order, Crassulaceæ.

A fleshy undershrub bearing numerous many-flowered cymes of white flowers. Stems erect or ascending, fleshy, glabrous. Leaves opposite, petiolate, ovate to sub-rotund, concave, thick and fleshy, margins quite entire, obtuse at apex, tapering at base to the short petiole, both surfaces thickly covered with minute pustules, which on the upper surface are depressed, on the lower one very slightly raised; 1½ to 3 inches long; 1 to 2 inches wide; petioles connate in a ring, channelled above; ½ to ¾ inch long. Inflorescence cymoso-paniculate, frequently, but not always trichotomous, with a small oblong bract at each fork, the lower branches of the inflorescence elongated, terete, glabrous; pedicels 1 to 2-lines long. Calyx gamosepalous, 5-lobed, small, tube conical, lobes triangular, reaching to the apparent sinuses of the corolla. Corolla of 5 lanceolate, spreading white petals; 3 lines long, 1 line wide Stamens 5, alternate with petals, and shorter than them; filaments filiform, white; anthers small, ovate, 2-celled, basi-fixed, brown when ripe. Carpels 5, tapering upwards to a filiform style. Squamæ 5, oblong, wider upwards. Ovules covered with minute prominences.

Habitat: Natal: Inanda; 1800 feet alt., June, *Wood* No. 597b.

Drawn and described from specimens brought from Upper Umkomaas, and grown in Botanic Garden, Durban.

A plant well worth cultivation, and very suitable for rock work, the flowers are not large, but are borne in great profusion, and are pure white. It has no uses so far as known to us, and the natives know it only as in-Telezi.

Fig. 1, calyx; 2, two corolla lobes and two stamens; 3, calyx; 4, a single carpel, 5, ovule; *alt enlarged.*

PLATE 327.

HELICHRYSUM TERETIFOLIUM, LESS. (Fl. Cap. Vol 3, p. 250.)
Natural Order, COMPOSITÆ.

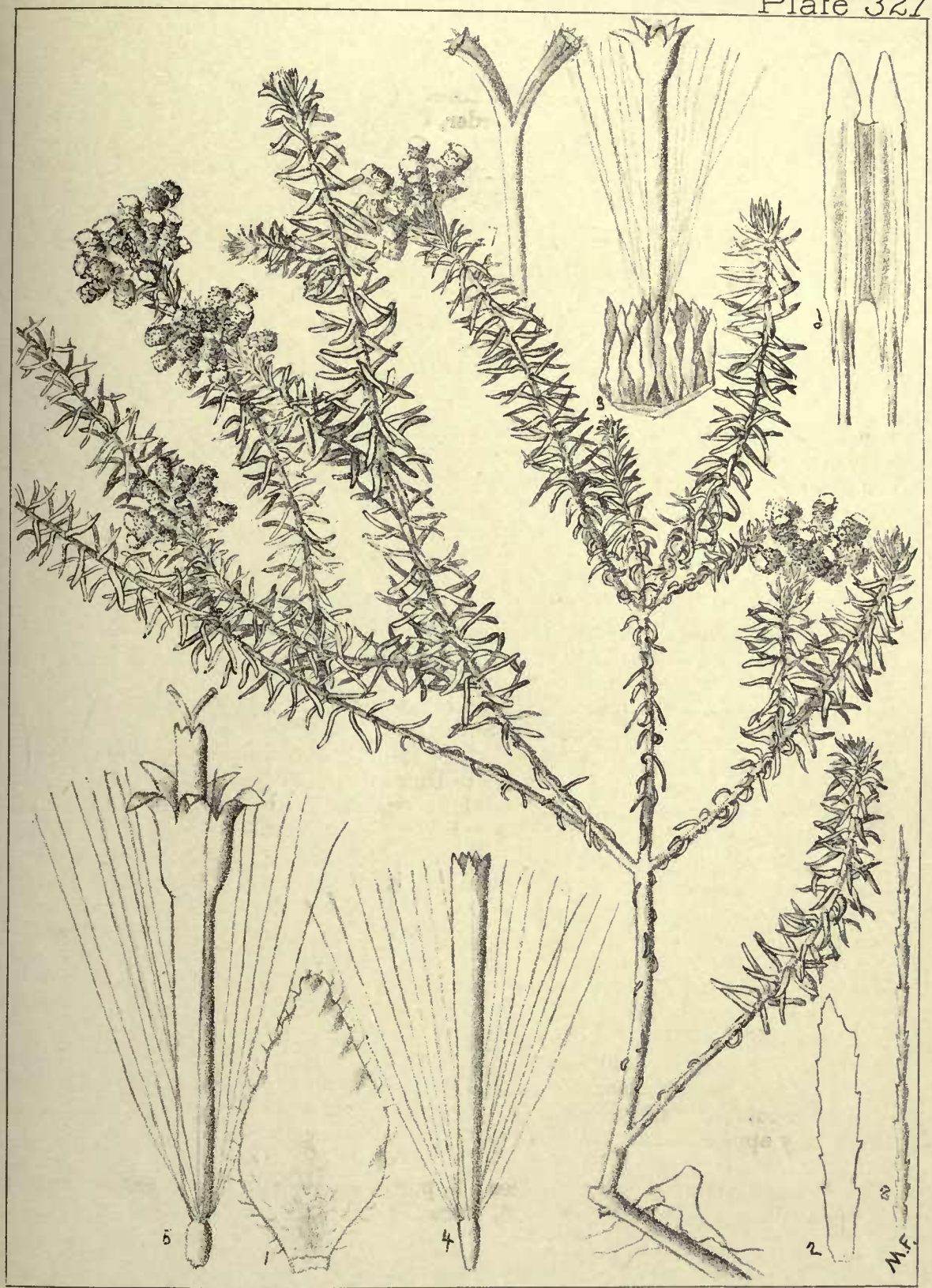
A much branched spreading undershrub, scarcely reaching to 1 foot in height. Stems erect or decumbent, closely leafy, younger portions of stems and branches densely white tomentose, older subglabrous. Leaves linear, sessile, heath-like, their margins strongly revolute, apex mucronate, recurved, glabrous and green above, densely covered with white silky tomentum beneath; 3 to 4 or more lines long, ½ line wide. Heads many flowered, 3 lines long, corymbose, terminal on the branchlets, 5 to 12 in each corymb, pedicels 1 to 4 lines long, densely tomentose. Involucral scales in about 6 series, the inner ones creamy white, outer and lowest semitransparent, yellowish, all obtuse and with a few silky white hairs. Marginal florets few, filiform, female; disk florets numerous, perfect. Corollas tubular, 5-lobed, lobes glandular externally, those of the disk florets recurved, those of the marginal ones erect. Stamens of disk florets tailed at base. Style arms truncate, compressed. Receptacle fimbrilliferous, the fimbrils much longer than the ovaries. Achenes not seen.

Habitat: NATAL; *Krauss; Sutherland;* Isipingo, 50 feet alt., *Wood* No. 1003; 9134. Also in Cape Colony.

Drawn and described from Wood's No. 9134, collected at Isipingo, September, 1903.

This plant would appear to be more common in Cape Colony than in Natal. It was collected here by Krauss and Sutherland, but precise locality is not given. We have only seen it near the mouth of the Isipingo river, though probably it will be found near the sea coast from there to Umzimkulu It was first figured in the *Botanical Magazine* in 1799 as *Gnaphalium ericoides*, and it is there said of it: "Lineæus describes this species of Gnaphalium, most probably from dried specimens collected at the Cape, where it is native. So insignificant did the plant appear to him, that in his description he calls it 'misera.' Compared with the more magnificent species such a term might not be inapplicable, but though small, the plant possesses much beauty when cultivated, and hence is generally kept in our greenhouses. It flowers from March till August. Its branches, naturally weak and trailing, require to be carefully tied up; if this business be executed with taste and judgment, the natural beauty of the plant may be considerably heightened. It is readily increased by cuttings." In the *Botanical Magazine* the involucres are coloured red, and the Flora Capensis says, "sometimes very pale, creamy, sometimes cinnamon-brown, commonly two coloured, the outer scales deeper in colour." In our specimens they are as stated in the text; in MacOwans 1162 they appear to have been cinnamon-brown.

Fig. 1, involucral scale; 2, palea; 3, portion of receptacle with perfect florets; 4, female floret; 5, perfect floret; 6, stamens; 7, stigma; *all enlarged.*



Helichrysum teretifolium, *Less.*

Jasminium multipartitum, *Hochst.*

PLATE 328.

JASMINIUM MULTIPARTITUM, HOCHST. (in Flora, XXVII, 1844, 825).
Natural Order, OLEACEÆ.

A climbing shrub with white flowers. Stems much branched, wide climbing, terete or furrowed on opposite sides and sligthly compressed at nodes, glabrous, green. Leaves opposite, petiolate, exstipulate, ovate-acuminate to lanceolate, rounded or subcordate at base, acute at apex, margins quite entire, veins pinnate, surfaces glabrous, paler beneath, reaching to $2\frac{3}{4}$ inches long, 1 to $1\frac{1}{4}$ inch wide above the base; petiole 3 to $3\frac{1}{4}$ lines long, jointed and knee-bent in the middle. Flowers axillary and terminal, solitary, pedunculate, white. Calyx gamosepalous, tube cylindrical, 1 to $1\frac{1}{2}$ line long, lobes 8 to 10, linear subulate, erect, equalling the tube. Corolla gamopetalous, hypocrateriform, tube slender, terete, up to 1 inch long, limb 8 to 11 lobed, lobes linear, acute, $\frac{1}{2}$ to $\frac{3}{4}$ inch long, white above, pinkish white beneath, 1 to 2 lines wide. Stamens 2, on corolla tube, filaments short, anthers linear-oblong, 2-celled. Ovary superior, 2-celled, cells 1-seeded. Style slender, stigma 2-lobed. Berry didymous, cells 1-seeded, the cells almost completely free from each other, one sometimes absent.

Habitat: Natal; Near Durban, 150 feet alt, September *Wood*; Inanda, 1800 feet alt, December, *Wood* No. 356; near Durban, October, *Wood*.

This is the second species of the genus that has been figured in this work. the other being *J. streptopus* (Vol 1, p. 50) and in general appearance the plant now figured is very similar to it, but the conspicuous hairs on the leaves and petioles are, in this species, quite absent, and the calyx lobes are much longer. It will be noticed that the petioles are jointed, and when the mature leaf has fallen away the hard stiff base of the petiole remains, and most likely is of use in sustaining the plant amongst the low shrubs where it is most frequently found. It is known to the natives as is-Andhla-ka-inkosikazi or Queen's hand.

Fig. 1, calyx; 2, corolla opened; 3, stamen; 4, ovary ond portion of style; 5, stigma; 6, section of ovary; 7, fruit, natural size; *except Fig. 7, all enlarged.*

PLATE 329.

PSYCHOTRIA CAPENSIS, VATKE. (Fl. Cap. Vol. 3, p. 21. sub Grumilea).
Natural Order, RUBIACEÆ.

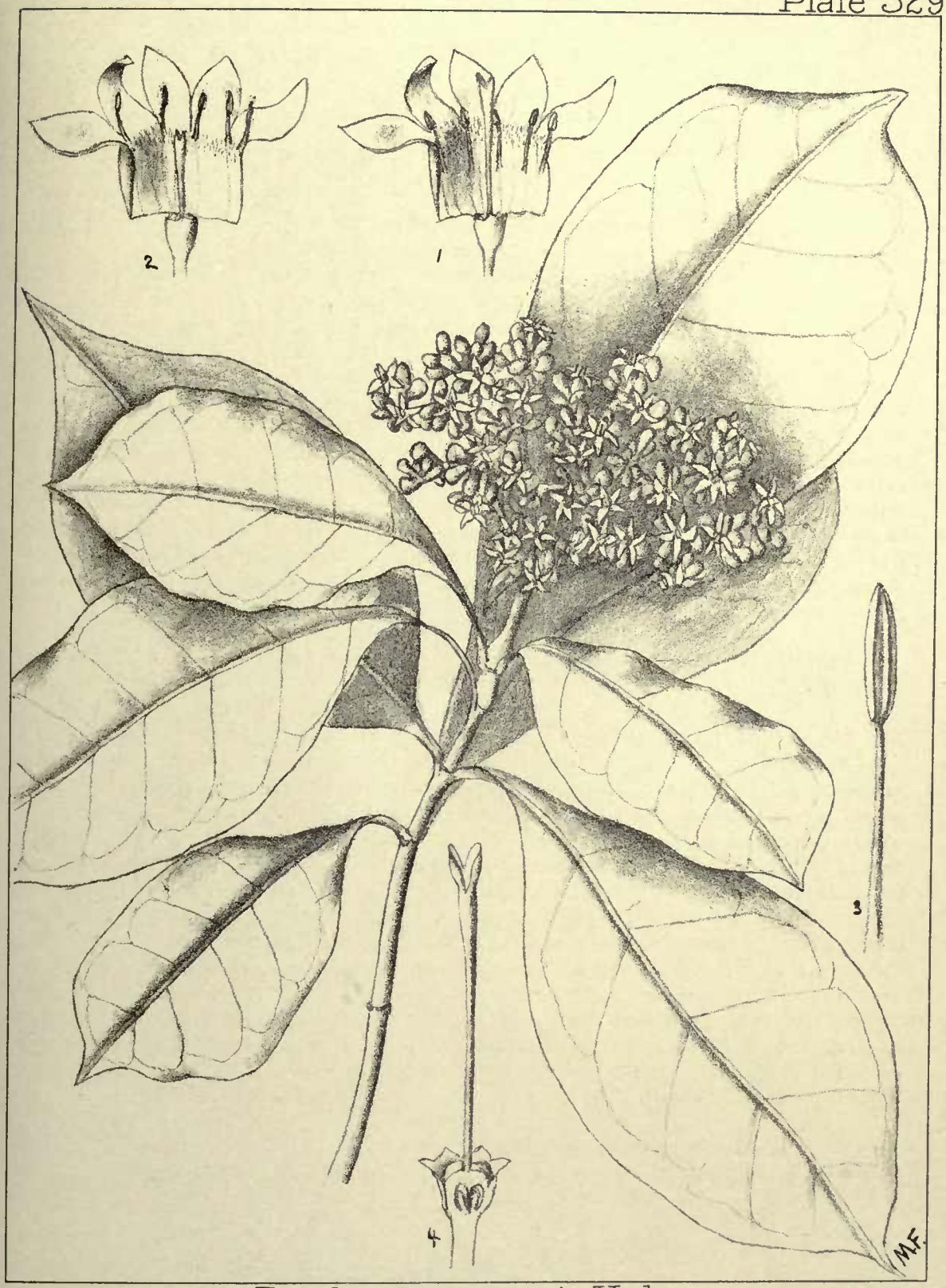
A shrub or small tree, 8 to 15 feet high, with large leaves and yellow flowers. Branches terete, green. Leaves opposite, simple, stipulate, petiolate, pinnate veined, glandular in axils of veins beneath, elliptic to obovate, margins quite entire, obtuse at apex, gradually tapering at base to the petiole, glabrous and shining above, lighter coloured and dull beneath, 4 to 7 inches long, including the petiole, 1½ to 2½ inches wide, petiole ¾ to 1 inch long; stipules broad, mucronulate, coriaceous, deciduous. Inflorescence corymbose, corymbs trichotomous, pedunculate; common peduncle ¾ to 1½ inch long, bearing a pair of oblanceolate bracts at base of the secondary peduncles; pedicels ½ to 1 line long. Calyx gamosepalous, urceolate, with 5 very short acute or obtuse teeth, the whole margin ciliolate; ½ to 1 line long. Corolla gamopetalous, deciduous, yellow, 5-lobed, 2½ to 3 lines long, tube cylindrical a little longer than the lobes, lobes ovate, strongly reflexed, with a dense ring of white hairs in throat. Stamens 5, on corolla tube, anthers oblong, 2-celled. Ovary inferior, 2-celled, cells 1-ovuled. Stigma bifid. Fruit a globose berry, 2-celled, 2-seeded, red when ripe, 4 to 5 lines diameter, smooth and glabrous.

Habitat: NATAL: *Drege; Sanderson*; *Krauss* No. 428; *Gerrard & McKen* No. 830; *Wood* No. 306; October *Wood* No. 9097.

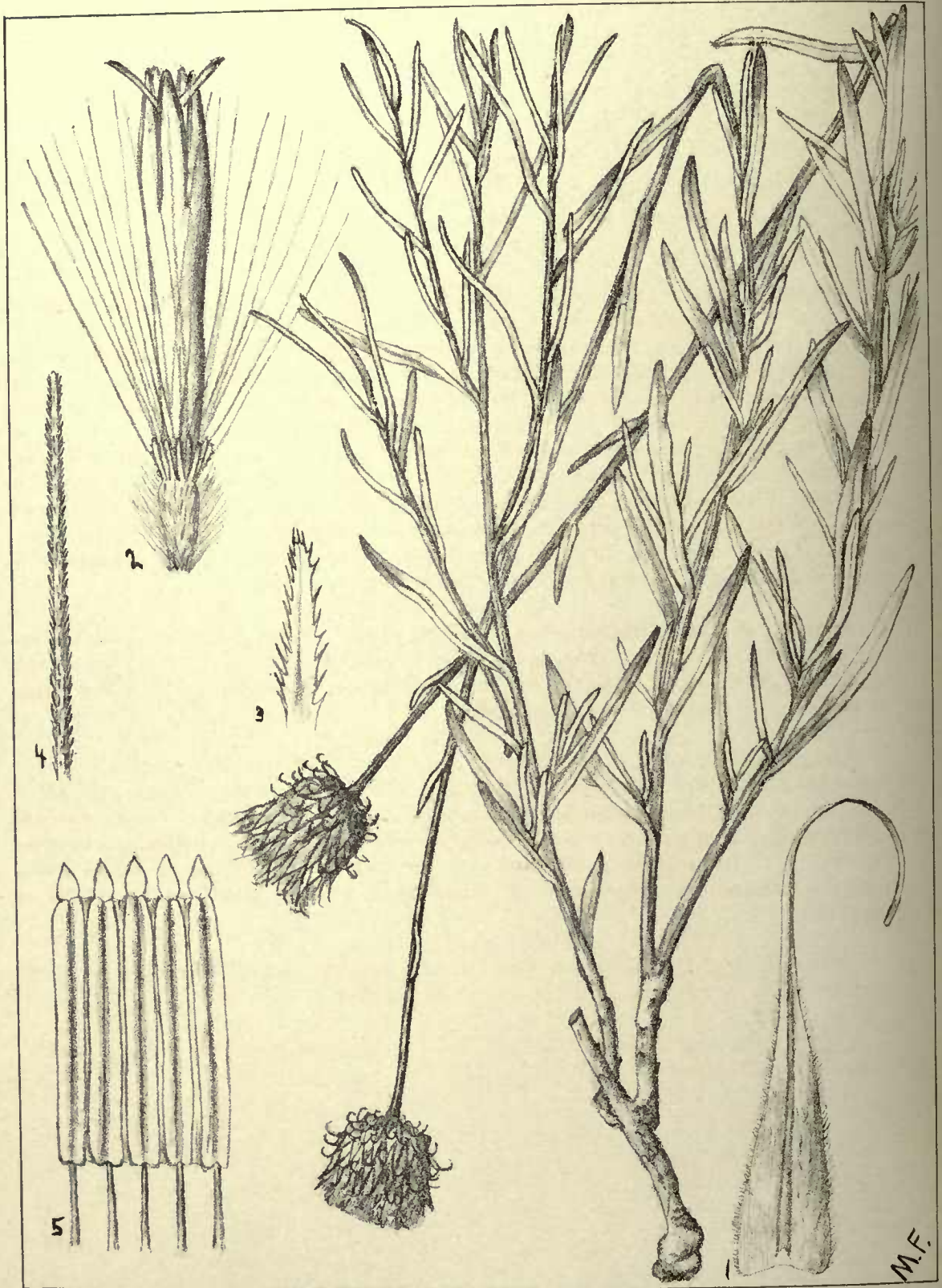
Drawn and described from Wood's 9097, gathered near Durban.

A shrub with glossy leaves, bearing in the season large trusses of yellow flowers. In the Flora Capensis it appears as *Grumilea capensis*, Sond, but that genus is now merged in *Psychotria*, a genus which includes about 500 species inhabiting tropical and sub-tropical countries in both hemispheres. In the description of the genus Grumilea in the Flora Capensis it is stated that the stamens are subexserted and the style exserted, the fact being that the flowers are dimorphic, the two forms appearing on different plants, in the long-styled form it is as stated in the Flora Capensis, in the long-stammened form the stamens are exserted and the style included. The native name of the plant is i-Biquongo and the roots are used as an ingredient in emetics. Fourcade in his "Report on Natal Forests" says of this tree, "Knysna, Eastern Province and Natal Coast. A tree 9 to 18 inches in diameter, 20 to 30 feet high," and quoting from Pappe he says, "Bark ash-coloured, thin, wood citron yellow, hard, tough, and useful for many purposes." We have never met with it so large as here stated.

Fig. 1, flower opened, long-styled form; 2, same, short-styled form; 3, stamen; 4, longitudinal section of ovary, style and stigma; *all enlarged.*



Psychotria capensis, *Vatke*.



Vernonia Gerrardi, *Harv.*

PLATE 330.

VERNONIA GERRARDI, HARV. (Fl. Cap. Vol, III, p. 53.)
Natural Order COMPOSITÆ.

A many stemmed herbaceous plant with thick, woody roots. Stems branched below and, like the branches, strongly furrow-striate, minutely scurfy and gland-dotted, 15 to 18 inches high. Leaves simple, sub-sessile, linear, acute, entire, flat, narrowed to base, glabrous, conspicuously gland-dotted on both surfaces, 1 to 2 inches long, smaller upwards. Heads many flowered, discoid, solitary on long peduncles, which reach 12 to 18 inches in height and bear a few depauperated leaves; 3 to 4 inches diameter. Flowers purple. Involucral scales in several series, lanceolate, cuspidate-acuminate, the lower and central ones recurved, uppermost erect, lowest shortest, all cobwebby and woolly ciliate. Pappus scales in two series, outer ones few, short, flat, serrate; inner ones very long, bristle-like, barbellate. Corolla tubular, deeply 5-fid, lobes linear-oblong, obtuse. Stamens 5, anthers subsagittate. Achenes ribbed, densely silky.

Habitat: NATAL: Biggarsberg, *Gerrard*, 1060; near Estcourt, 3-4000 feet alt, December, *Wood*, No. 3595; near Howick, 3-4000 feet alt, November, *Wood*, No. 5120; Mooi River, 4-5000 feet alt, December, *Wood*, No. 6171; Zululand, 1-2000 feet alt, March, *Wood*, No. 8756.

The genus Vernonia is a very large one including nearly 400 species, confined to tropical and subtropical regions. Of these 64 are found in tropical and 15 in South Africa, and 14 of these have have been collected in Natal. The species are of diverse habit, some being trees, some shrubs and herbaceous plants, and some climbers. *V. Gerrardi* is remarkable on account of its involucral scales being squarrose, resembling some species of Athrixia, and it is a plant not unworthy of cultivation.

Note.—In the drawing the anthers are by mistake shown as obtuse at base; they are really sagittate as in *V. monocephala* Pl. 331.

Fig. 1, involucral scale; 2, floret; 3, outer pappus scale; 4, pappus bristle; 5, stamens; *all enlarged.*

PLATE 331.

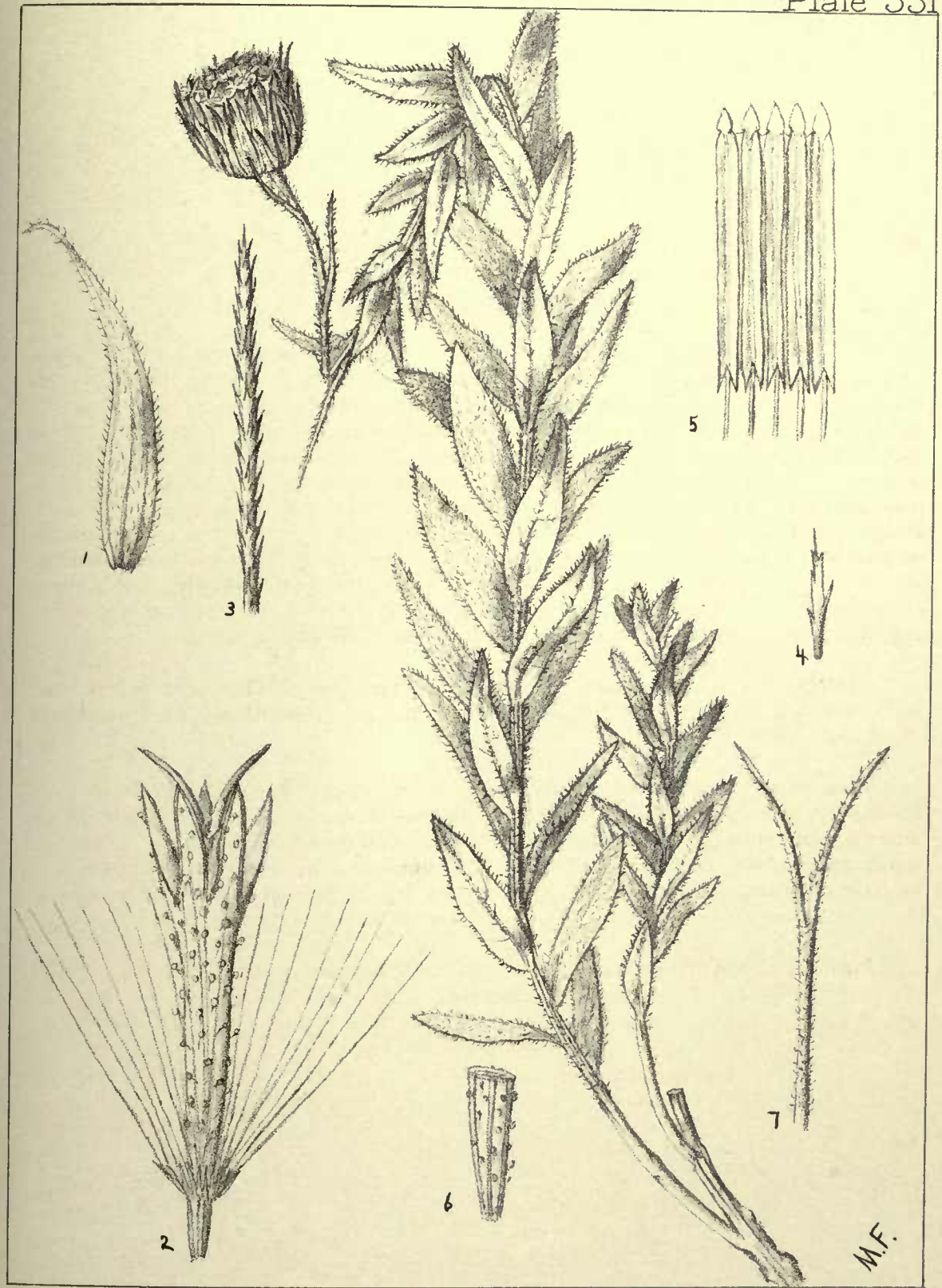
VERNONIA MONOCEPHALA, HARV. (Fl. Cap. Vol. 3, p. 53).
Natural Order, COMPOSITÆ.

Herbaceous, branched from base, 1 to 2 feet high, branches simple or subsimple, erect or ascending, striate, clothed with whitish hairs, especially on the younger parts. Leaves closely set on the central portion of the stem, alternate, sessile, narrowly oblong-lanceolate, entire, mucronate, ciliate with stiff, white hairs, and with similar scattered hairs on the surfaces, especially so on the midrib beneath; $\frac{3}{4}$ to $1\frac{1}{2}$ inch long in our specimens. Peduncle usually long and with a few (3-4) very narrow linear leaves, or sometimes leafy nearly to apex, 1-headed. Heads $\frac{3}{4}$ to 1 inch wide, many flowered, flowers purple. Involucral scales linear-lanceolate, long acuminate, subpungent, erect or spreading, not squarrose, scabrous and setose with whitish hairs. Pappus dull white, the outer bristles short, inner much longer, both linear, serrate. Corolla 5-lobed, glandular externally. Anthers sagittate; style arms finely pubescent. Achenes 5-7-ribbed, glandular.

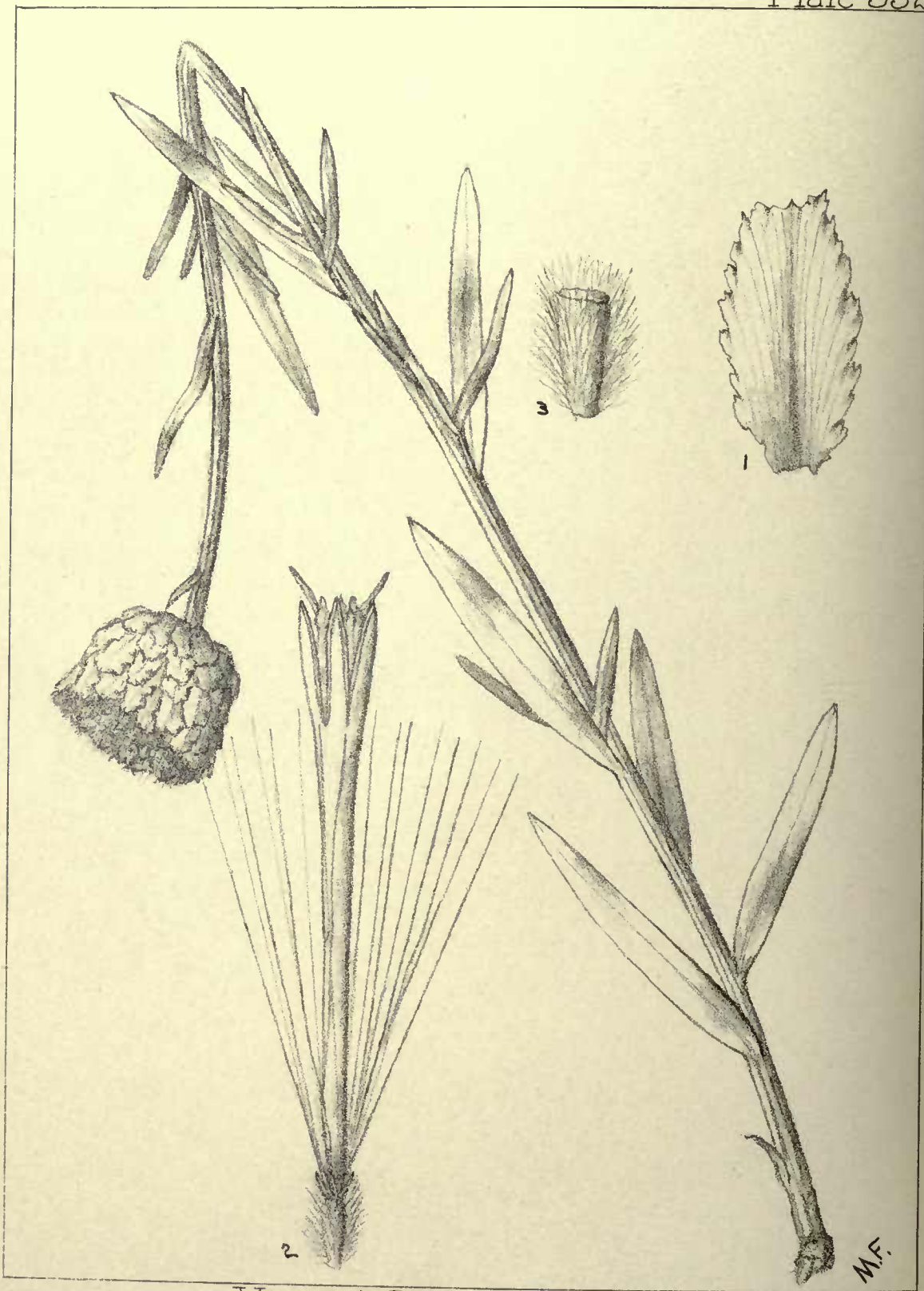
Habitat: NATAL: Zululand, *Gerrard & McKen*, No. 1011; near Murchison, 2000 feet alt, May, *Wood*, No. 3090; Van Reenen, 5-6000 feet alt, November, *Wood*, Nos. 4666, 6578, 6806.

This plant is very like V. Gerrardi, but is easily distinguished from that species by its involucral scales not being squarrose, and also by its ribbed, glandular achenes, and both of these plants differ from V. Vernonella, by their acuminate involucral scales. In the Flora Capensis the achenes are said to be 10-ribbed, but we have not been able to distinguish more than 7 ribs, but the achenes in the heads examined were scarcely mature. The plant is confined to South Africa.

Fig. 1, involucral scale; 2, floret; 3, inner pappus bristle; 4, outer pappus bristle; 5, stamens; 6, achenes; *all enlarged.*



Vernonia monocephala, *Harv.*



Vernonia Vernonella, *Harv.*

PLATE 332.

VERNONIA VERNONELLA, HARV. (Fl. Cap. Vol. II, p. 53.)
Natural Order, COMPOSITÆ.

A perennial glabrous plant throwing up several stems from a woody root. Stems furrow-striate, 6 to 15 inches long. Leaves linear-oblong, entire, narrowed to base, acute, sessile, 1-veined, 1 to $2\frac{1}{2}$ inches long, smaller upwards, margins a little recurved. Heads terminal, solitary, pedunculate, many flowered, $\frac{3}{4}$ to $1\frac{1}{4}$ inch diameter, flowers purple. Involucral scales in several rows, oblong, obtuse, glabrous, margins irregularly lacerate. Pappus in two series, outer ones much the shortest, of very short narrow scales, inner of many long, minutely serrate, dull coloured bristles. Corollas tubular, very deeply 5-fid, lobes lanceolate. Stamens 5, filaments smooth; anthers sagittate. Achenes densely silky.

Habitat: NATAL: *Guienzius* No. 334; Inyaninga, near Verulam, 200 feet alt, November, *Wood*, No. 2848; Mount Edgecombe, 200 feet alt, November, *Wood*.

This plant does not appear to be very common; we have only met with it in the localities quoted, both being only a mile or two from the sea-coast. It would seem to be confined to Natal. It does not appear to be known to the natives, who probably confuse it with *V. monocephala*, or *V. Gerrardi*, from both of which it is easily distinguished by its broad, obtuse, lacerate involucral scales. It is a rather coarse looking plant and is scarcely worthy of cultivation.

Fig. 1, involucral scale; 2, floret; 3, achene; *all enlarged.*

PLATE 333

VERNONIA NATALENSIS, Sch. Bip. (Fl. Cap. Vol XXXIII, p. 51.)
Natural Order, COMPOSITÆ.

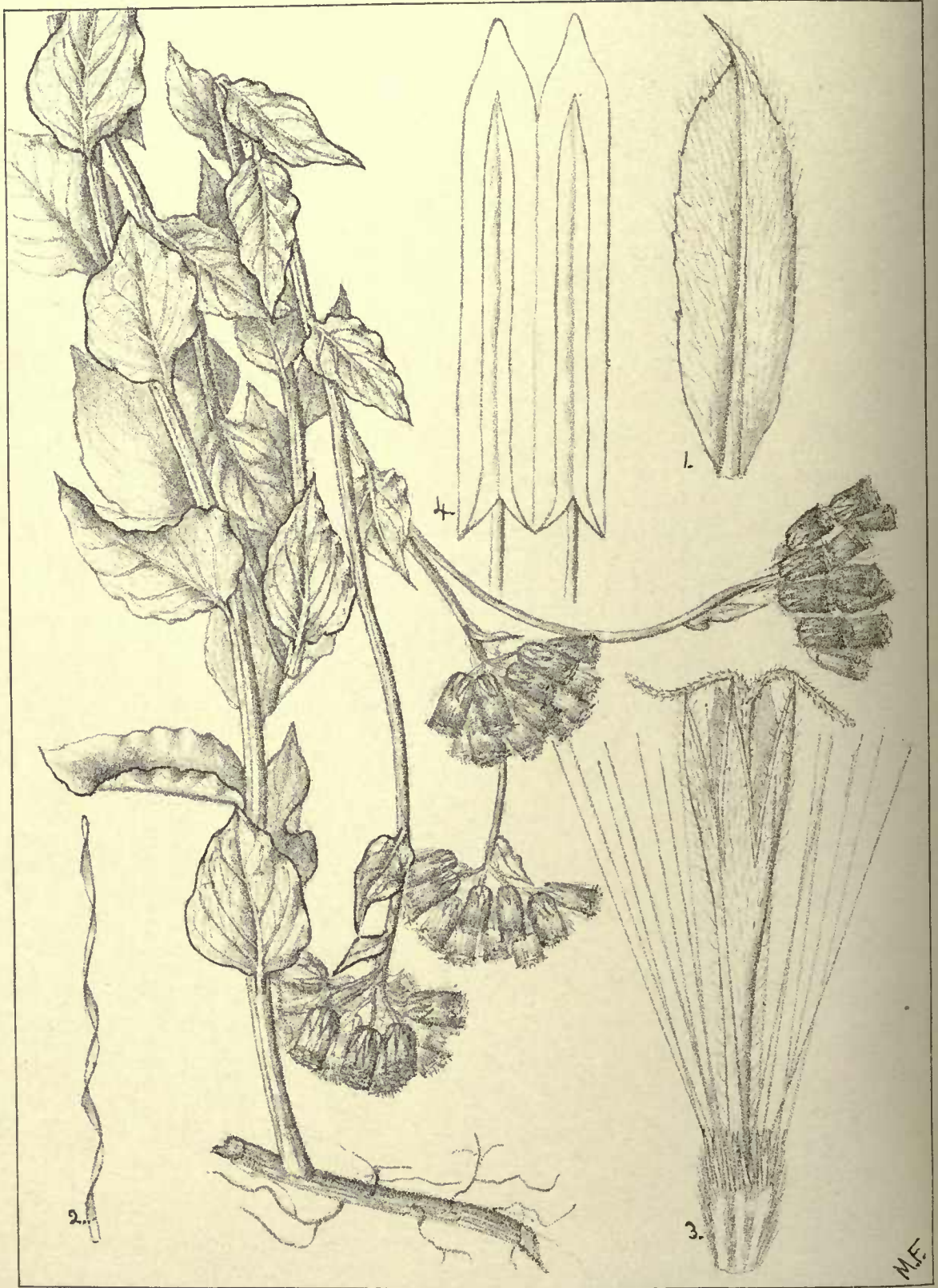
Herbaceous. Stems simple, quite erect, striate, silky canescent, 12 to 24 inches high. Leaves alternate, sessile, crowded, lanceolate, entire, acute or acuminate, densely silvery canescent on both surfaces, veins very prominent beneath, visible above; 1 to 3 inches long, $\frac{1}{4}$ to $\frac{3}{4}$ wide in centre. Inflorescence corymbose, of many heads, flat topped, 2 to 3 inches across, flowers purple; pedicels 1 to $1\frac{3}{4}$ inch long. Involucral scales in several rows, lanceolate, attenuate, bristle pointed, silky on the back. Pappus bristles in 2 rows, barbellate, outer row short, inner long. Corolla tubular, 5-fid, lobes linear-oblong, acute, externally pubescent. Anthers subsagittate. Achenes silky.

Habitat: NATAL: *Krauss*, No. 443; near Mooi River, 4000 feet alt, *Wood* (in Colonial Herbarium No. 3782); Inanda, 1800 feet alt, October, *Wood*, No. 1132.

This plant is easily distinguishable from other Natal species by its narrow, strongly ribbed leaves, which are densely silvery canescent on both surfaces. It resembles *V. pinifolia*, Less, but in that species the leaves are much longer and narrower, the conspicuous silvery pubescence almost altogether absent, and the involucral scales are acute or mucronate, not attenuate. It has not been found out of South Africa.

Fig. 1, involucral scale; 2, hair from involucral scale; 3, floret; 4, anthers; *all enlarged.*

Vernonia natalensis, *Sch. Bip.*



Vernonia Krausii, *Sch. Bip.*

PLATE 334.

VERNONIA KRAUSSII, Sch. Bip. (Fl. Cap. Vol. III, p. 51.)
Natural order, COMPOSITÆ.

Herbaceous with deep pink or purplish flowers. Stem simple, erect, striate, finely silky, pubescent with silvery hairs; reaching to 3 feet in height. Leaves alternate, distant, shortly petiolate, ovate, entire, acute, shortly acuminate, or sometimes obtuse, densely silky silvery beneath, in age glabrous above, veins very prominent beneath, conspicuous above; $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, $\frac{1}{2}$ to 1 inch wide; petiole 1 to 2 lines long Inflorescence corymbose, many headed, 2 to 4 inches across. Involucral scales about 12 to 15, oblong to oblong-lanceolate, acutely acuminate, 2 to 3 lines long, canescent. Corolla tubular, deeply 5-lobed, lobes lanceolate acuminate from a broad base; pilose, especially in upper portion. Pappus in two rows, inner of long bristles, outer of short scales. Stamens 5, filaments glabrous, anthers sagittate at base. Achenes silky, striate.

Habitat: NATAL: Common on hillsides coast to midlands. Inanda, 1800 feet alt, October, *Wood*, No. 1065: Zululand, 1 to 2000 feet alt, April, *Wylie* (*Wood*, No. 5755); Zululand, March, *Wylie* (*Wood*, No. 8593). Also in Transvaal.

This plant is not uncommon in open ground, and is often found in large patches, its silvery foliage and numerous purplish flowers making it very conspicuous.

The Flora Capensis states that the variety "oligocephala" (*Webbia oligocephala* D.C.) seems "to be a starved variety." This may be so, but it appears to be quite distinct, in addition to its being a more slender plant. The leaves are mostly orbicular, and distinctly mucronate. There are fewer heads in the corymb, and the heads themselves are larger. The plant has no known useful properties, and so far as we can learn the natives do not use it for any purpose.

Fig. 1, involucral scale; 2, hair from same; 3 floret; 4, two stamens; *all enlarged.*

PLATE 335.

VERNONIA HIRSUTA, Sch. Bip. (Fl. Cap. Vol. III, p. 51.)
Natural Order, COMPOSITÆ.

An herbaceous, erect plant, bearing purple flowers. Stem erect, simple or branched, striate, densely clothed with soft whitish curled hairs. Leaves sessile, alternate, oblong, subcordate at base, margins obscurely crenato-serrate, often slightly reflexed, apex obtuse or apiculate, upper surface bullate, finely and distantly pubescent, dark green in oldest specimens, midvein dark coloured, under surface densely pilose with whitish hairs, many of which are forked; veins, veinlets and venules very prominent; $1\frac{1}{2}$ to $3\frac{1}{2}$ inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inch wide. Inflorescence corymbose, many headed, usually flat topped, peduncles reaching to $1\frac{1}{2}$ to 2 inches long, pedicels $\frac{1}{4}$ to $\frac{3}{4}$ inch long. Involucral scales oblong, acutely acuminate, quite erect, densely pilose with whitish mostly forked hairs, as also are the peduncles and pedicels. Corolla tubular, 5-lobed, lobes linear, minutely glandular at apex. Anthers sagittate at base. Achenes ribbed, silky on the ribs.

Habitat: NATAL: Inanda, 1800 feet alt, October, *Wood*, No. 1658; Mount Edgecombe, 500 feet alt, *Wood*, in Colonial Herbarium, No. 3758; near Durban, January, *Wood.*

A rather common plant in coast and midland districts, flowering profusely in the summer months, when its large trusses of flowers render it a conspicuous object on the hillsides and open places where it is usually found; it occurs occasionally with whitish flowers. In the Flora Capensis the hairs are said to be curled, and to some extent they are so, but they are very frequently forked as shown in the figure.

Fig. 1, involucral scale; 2, floret; 3, two stamens; 4, forked hair from leaf; *all enlarged.*

Vernonia hirsuta, *Sch. Bip.*

Antidesma venosum, *E.M.*

PLATE 336.

ANTIDESMA VENOSUM, E.M. (Thes. Cap. Vol. II, t. 169.)
Natural Order, EUPHORBIACEÆ.

A small dioecious tree bearing dark red berries, and yellow-green flowers. Young branches, twigs, petioles and veins of the leaves pubescent. Leaves alternate, petiolate, stipulate, oblong to ovate, rounded to base, tapering to an acute apex, margins quite entire, veins conspicuous; 2 to 4 inches long, $\frac{3}{4}$ to $2\frac{1}{4}$ inches wide, young ones pubescent, older dark green, shining, glabrous except on veins beneath; petioles 2 to 3 lines long, swollen; stipules lanceolate, deciduous, as long as the petiole. Inflorescence in simple or branched axillary pendent racemes, from $1\frac{1}{2}$ to 4 inches long. Calyx of staminal flowers deeply 3 to 5-lobed, the lobes a little imbricate, and ciliate with a few minute hairs, pilose inside at base of disk; disk annular. Stamens 3 to 5, exserted, opposite calyx, lobes, filaments free, ovary rudimentary. Calyx of pistillate flowers similar to the staminate one; disk annular. Stamens none. Styles 3 to 5, short, recurved, sometimes 2-lobed. Ovary sessile, 1-celled, 2-ovuled, one ovule abortive. Fruit a 1-seeded glabrous berry, red when ripe.

Habitat: NATAL: Coast and midlands; near Durban, December, *Wood*, in Colonial Herbarium, No. 1465; same locality, January, *Wood*, No. 9130.

Drawn and described from *Wood's* No. 9130.

A small tree of coast and midland districts, bearing in the season pendent racemes of small berries, which are eaten by natives and children; they have been thought to be poisonous, and they are certainly unwholesome and indigestible. From the figure in Thesaurus Capensis, the inflorescence would appear to be erect, the drawing having been made from dried specimens, in reality they are as shown in the figure. The genus Antidesma includes about 60 species found in the warmer parts of the old world, none in America. The one here described is so far as at present known the only Natal species, but there are 2 species in South Africa, 3 in Central Africa, and 2 in West Africa. Our species is known to the natives as isi-Bangaumloti.

Fig. 1, portion of branch with pistillate inflorescence; 2, branch with staminal flowers; 3 pistillate flower with bract; 4, disk, and portion of ovary; 5, portion of staminal raceme; 6, disk of staminal flower with rudimentary pistil and portion of filaments; 7, stamen, front view; 8, same, back view; 9, calyx; 10, bract; except figures 1 and 2, *all variously enlarged.*

PLATE 337.

ERIOSEMA SALIGNUM, E. Meyer. (Fl. Cap. Vol. II, p. 261.)
Natural Order, LEGUMINOSÆ.

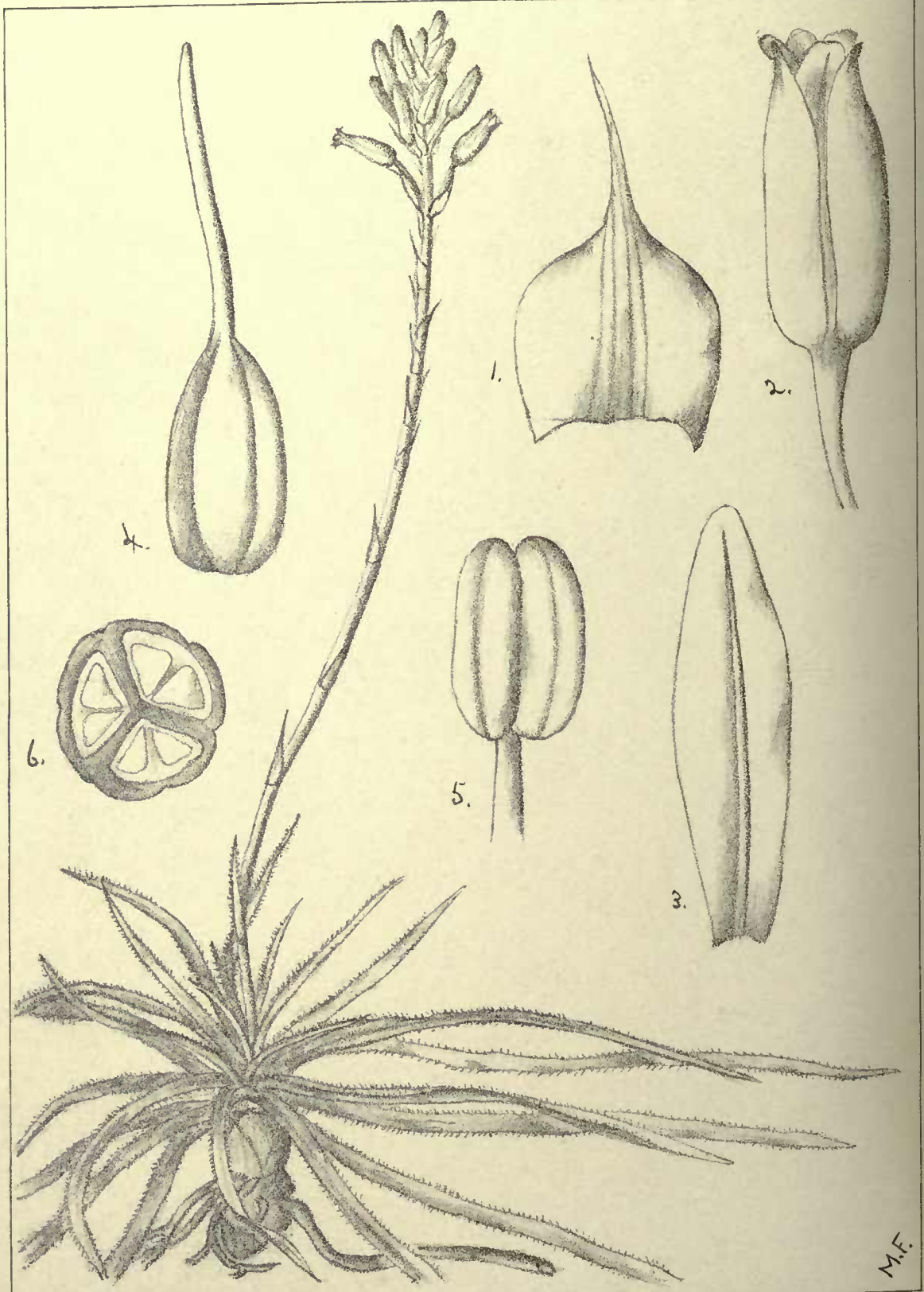
A tall, slender plant growing in open grassy land. Stems one or more, 6 to 18 inches high, often branched at base, furrowed, covered with soft white silky hairs. Leaves alternate, petiolate, stipulate, trifoliate, linear-lanceolate, acute, rounded at base, margins quite entire, veins prominent beneath; green and glabrous above, densely clothed with white silky hairs beneath; 1½ to 4 inches long, 4 to 8 lines wide; common petiole 2 to 3 lines long, secondary petioles shorter; all silky pubescent; stipules linear-lanceolate ½ to ¾ inch long, striate, brown, thinly pilose with white hairs. Inflorescence racemose, racemes axillary and terminal, floriferous beyond the middle, the flowers strongly deflexed. Peduncles 2 to 6 inches long, pedicels very short. Calyx campanulate, 5-fid, lobes sub-equal, longer than the tube, long acuminate, pilose and glandular externally, 2½ lines long. Corolla papilionaceous; vexillum, with inflexed auricles at base, strongly reflexed, thrice longer than the calyx, pilose and glandular like the calyx, yellow on inner surface, brownish red externally; alae oblong, clawed, auricled at base, a little shorter than the vexillum, yellow; carina oblong, broader and a little shorter than the vexillum, yellow. Stamens 10, diadelphous, vexillary stamen free to base; anthers similar. Ovary sessile, densely pilose; style filiform, strongly and abruptly curved in the middle, and conspicuously thickened at the curve; glabrous; stigma minute, capitate. Legumes deflexed, broadly oblong, oblique, subsessile, apiculate, compressed, densely pilose, 2-seeded, seeds oblong, attached at the end of the linear hilum, minutely spotted, 2½ lines long, 2 lines wide.

Habitat: NATAL: Coast and midlands, common; Inanda, 1800 feet alt, *Wood*, No. 452; near Durban; January, *Wood*.

A very common plant in coast and midland districts, and probably in the upper district also; it is always found on grassy hills fully exposed to the sun's rays, and though a slender plant with few and distant leaves, their silvery under surface renders the plant very conspicuous. Another species of this genus, *Eriosema parviflorum*, E. Meyer was figured and described in this work, Vol. I, plate 91.

Fig. 1 calyx opened; 2, vexillum; 3, carina; 4, ala; 5, staminal tube opened; 6, ovary, style and stigma; 7, legumes; 8, legume opened; except fig. 7, *all enlarged.*

Eriosema salignum, *E. Mey.*



Aloe minima, *Baker.*

PLATE 338.

ALOE MINIMA, Baker. (Fl. Cap. Vol. VI, p. 305.)
Natural Order, LILIACEÆ.

Stem none. Leaves many (20 to 35) in a dense sessile rosette, spreading laterally and often curved, narrowly linear, deeply channelled down the face, reaching to 6 inches long, 1 to 1¼ line broad at base, margins with numerous small whitish spines, which are spreading or more commonly reflexed, upper surface green, unspotted, lower with a few dull white elongated spots in the lower third, green upwards. Inflorescence racemose; peduncles 10 to 30 inches long floriferous in the upper portion, the lower third with a few distant depauperated leaves reaching to 8 lines long, the middle with a few empty bracts, the upper third floriferous, bracts long acuminate from a broad base, 3-veined, a little shorter than the pedicels; pedicels, lower recurved, upper erect, 3 lines long. Perianth very pale red, straight, tube cylindrical, lobes 6, erect, 4 lines long, concave, much imbricated; outer ones greenish at apex, 3-nerved, inner strongly 1-nerved. Stamens 6, hypogynous, included; anthers 2-celled, dorsifixed, versatile, orange. Ovary superior, sessile, oblong-trigonous, 3-celled, many ovuled; style as long as the stamens, stigma minute. Capsule oblong, glabrous, bluntly trigonous, 3-celled loculicidally 3-valved, many seeded. Seeds triquetrous, winged, dark coloured.

Habitat: NATAL: South Downs, 4-5000 feet alt, solitary among grass, *Evans*, No. 409; Inanda, 1800 feet alt, March, *Wood*, No. 7597; near Malvern, June, *Col. Bowker* (*Wood*, No. 4714); Zululand, *Wylie*.

Drawn and described from specimens brought from Inkandhla, Zululand, 4-5000 feet alt, by Mr. Wylie and cultivated in Natal Botanic Gardens, Durban.

This is the smallest species of Aloe known to us; it has a very wide range in the colony, as will be seen by the authorities above quoted; it apparently varies much in size, the peduncle in the Zululand specimens, and also as shown in the Botanic Gardens in plants brought from the same locality, only reached 10 inches in height, while the Malvern specimen reached to 20 inches. It also varies much in the number of leaves; in the Flora Capensis it is described as having "about a dozen" in the Malvern and Inanda specimens less than that number, while in the Zululand specimens it is as stated in the text, viz., 20 to 35; the spots on the leaves are few and dull, and quite confined to the lower portion of the leaf; the raceme in the Zululand specimen is not subcapitate, while in the Malvern specimen it approaches to that form. The natives have no distinct name for the plant and do not use it in any way.

Fig. 1, bract; 2, flower; 3, inner perianth lobe; 4, ovary, style and stigma; 5, stamen; 6, cross section of ovary; *all enlarged.*

PLATE 339.

SMILAX KRAUSSIANA, Meisn. (Fl. Cap. Vol. VI., p. 256.)
Natural Order, LILIACEÆ.

A dioecious climbing plant with yellow-green flowers in axillary umbels. Root-stock woody. Stems slender, woody, glabrous, striate, wide climbing. Leaves alternate, petiolate, broadly ovate to oblong, entire, rounded or subcordate at base, apex with a recurved mucro, 5-veined, the submarginal veins not so distinct as the three central ones, dark green, glabrous and shining; 3 to 4 inches long, 2 to 4 inches wide; petiole $\frac{1}{4}$ to $\frac{3}{4}$ inch long, with a pair of strong spirally curved tendrils at base. Inflorescence axillary, umbellate, umbels globose, many flowered; peduncles $\frac{3}{4}$ to 1 inch long, sub-amplexicaul, with a thick fleshy ovate bract at base, and two opposite dissimilar bracts one third from base, the lower of which encloses a leaf bud, the upper one amplexicaul and slightly decurrent, the apex of the peduncle dilated into a globose receptacle; pedicels equal in length, much longer than the flowers, bracteate at base, the bracts irregular in shape. Male flowers, perianth $\frac{1}{8}$ inch long, yellow-green, segments distinct, obtuse, recurved. Stamens 6, inserted at base of perianth lobes, filaments filiform, anthers oblong, basifixed, shorter than the filaments, rudimentary ovary none. Female flowers, perianth similar to those of the male; staminodia 3, filiform. Ovary sessile, 3-celled, cells 1-ovuled. Berry subglobose, 2 to 4-seeded. Ripe seeds not seen.

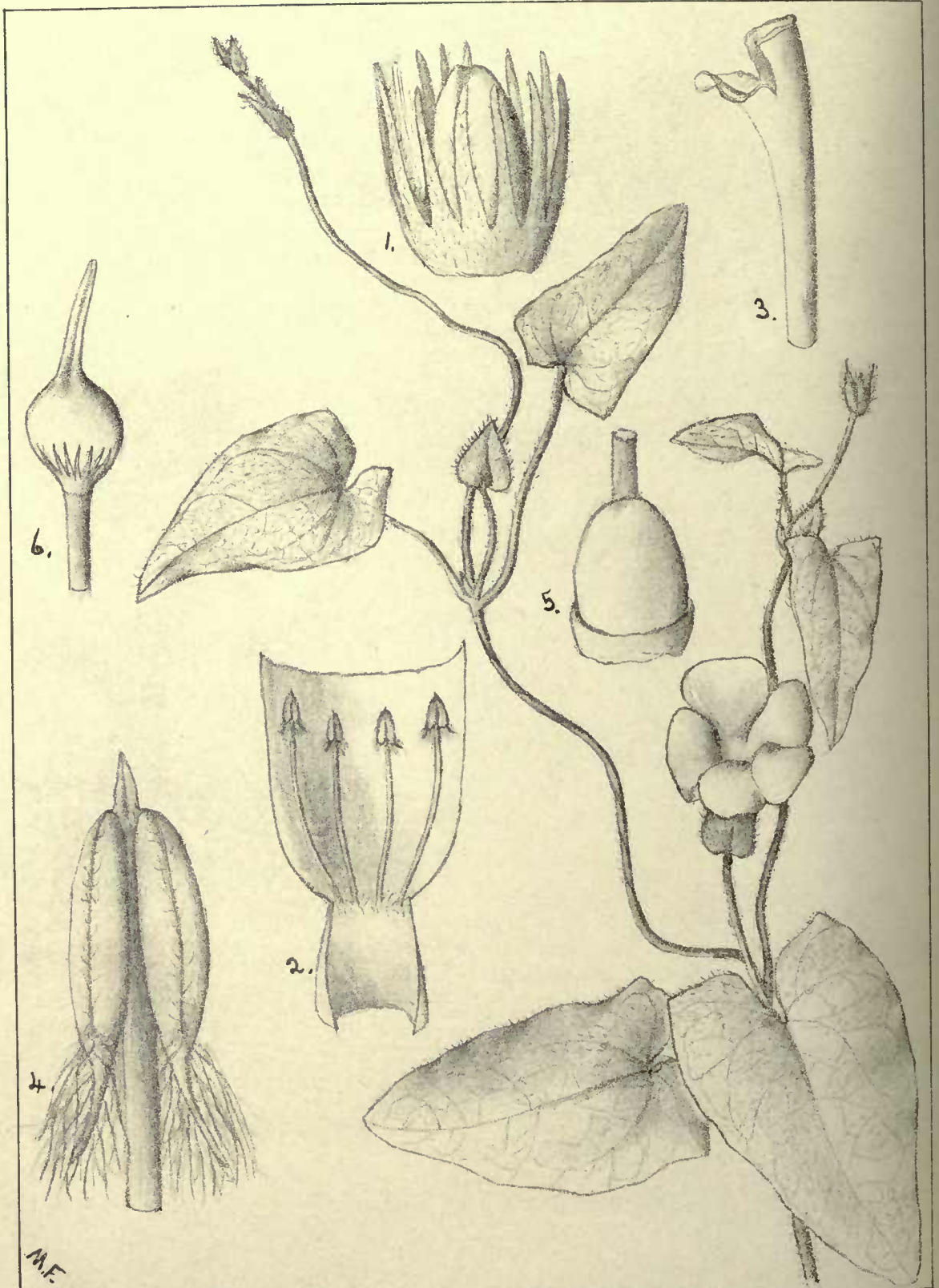
Habitat: NATAL: Coast districts. In woods near Durban, *Cooper*, No. 2035; Inanda, 1800 feet alt, *Wood*, No. 594; *Drege*, No. 4503; *Krauss*, No. 316; *Gerrard*, No. 293; *Gueinzius*; *Sanderson*; *Plant;* near Durban, 150 feet alt, January, *Wood.* Also in Transvaal and Mozambique.

Drawn and described from specimens gathered near Durban, January, 1904.

The genus Smilax includes some 200 species widely scattered. It is perhaps best known as containing the plant which yields the "Sarsaparilla" of commerce, which consists of the roots, not only of *S. sarsaparilla*, but of several other allied species inhabiting central America. One of the species of this genus is used for the purpose of making bowls of tobacco pipes and it is stated by Baron Mueller that nearly three millions of them are made in a year. I am not aware whether or not our plant has been tested for its medicinal properties. It is commonly known as "Wacht-en-Betje" and to the natives as "i-Yala."

Fig. 1, branch with pistillate flower; 2, pistillate flower; 3, staminate flower; 4, stamen; 5, bract from base of pedicel; 6, portion of peduncle showing bracts; 7, bract from base of peduncle; *except Fig. 1, all enlarged.*

Smilax Kraussiana, *Meisn.*



Thunbergia pondoensis, *Lindau*.

PLATE 340.

THUNBERGIA PONDOENSIS, Lindau. (Fl. Cap. Vol. V., p. 9.)
Natural Order, ACANTHACEÆ.

A slender climber with pure white flowers. Stems pubescent. Leaves opposite, petiolate, exstipulate, entire, acute or obtuse, cordate or hastate at base, 5-veined, hirsute on the veins beneath, scabrid above, reaching to 2½ inches long by 1¼ wide. Flowers axillary, solitary, pedunculate, enclosed between two opposite, ovate, veiny, ciliate bracteoles, 5 to 8 lines long, white. Calyx gamosepalous, tube very short, limb of 12 linear, erect, greenish white glandular lobes, 1 to 2 lines long. Corolla gamopetalous, white, tube cylindrical in lower portion, then gradually widening to throat and laterally compressed, tinged with yellow internally; limb 5-lobed, lobes obcordate, subregular, spreading or reflexed, equalling the tube, reaching to 1 inch in diameter. Stamens 4, inserted on lower portion of the tube, filaments filiform, with fine hairs at the point of insertion; anthers 2-celled, some but not all spurred, and with a tuft of moniliform hairs at base, occasionally one cell only spurred, connective produced beyond the cells; pollen globose, smooth. Ovary oblong, seated on an annular disk, style filiform, glabrous, 2-lobed, the lower lobe a little flattened, and recurved, the upper semi-funnel-shaped, erect. Capsule rostrate, seated in the calyx, and subtended by the persistent leafy bracts, loculicidally dehiscing, 2-celled, cells 2-seeded, seeds hemispherical, ripe seeds not seen.

Habitat: NATAL: Zululand, near Entumeni, 2-3000 feet alt, May, *Wood*, No. 4015; Ngoya, Zululand, 1-2000 feet alt, April, *Wylie* (*Wood*, No. 8478); near Durban, *Bachman*, No. 1265. Also in Pondoland.

Drawn and described from plants brought from Zululand by Mr. Wylie (*Wood*, No. 8478) and cultivated in Botanic Gardens, Durban.

This plant comes very near to *T. angulata*, a native of Madagascar. We have not seen this species, the chief differences according to the Flora Capensis being in the shape of the leaves, and the absence of hairs between the veins. It does not appear to be a very common plant in Natal, or it has perhaps been confused with *T. Dregeana* (Natal Plants, Vol. III., plate 280), especially as in the Flora Capensis the flowers of *T. Dregeana* are said to be white. In our specimens they are always yellow or buff, and those of *T. pondoensis* are always white; in general appearance the plants are very similar. This plant is not distinguished from *T. Dregeana* by the natives and is used for the same purposes.

Fig. 1, calyx and ovary; 2, base of corolla opened showing insertion of stamens; 3, portion of style with stigma; 4, stamen; 5, ovary and disk; 6, capsule; *all enlarged.*

PLATE 341.

CYRTANTHUS SANGUINEUS, Hook. (Fl. Cap. Vol. VI., p. 227.)
Natural Order, AMARYLLIDEÆ.

A bulbous plant with large brilliant scarlet flowers. Bulb ovoid, up to 3 inches diameter, tunics brown, thin, papery. Leaves 3-4, contemporary with the flowers, lanceolate, acute, entire, glabrous, 8 to 12 inches long, reaching to 1 inch broad in centre, tapering gradually to a compressed petiole, 3 to 5 inches long. Peduncles one or more to a bulb, terete or compressed, fistulose, pale green, reaching to 18 inches long. Flowers solitary or 2 or 3 to an umbel, scentless; pedicels $\frac{1}{2}$ to 2 inches long; spathe valves, 2 to 4, lanceolate, withering, 1 to 3 inches long. Perianth 3 to 5 inches long, tube slender, cylindical and green in lower portion, which is usually a little curved, then gradually widening to throat and becoming scarlet, throat $\frac{3}{4}$ to 1 inch diameter, interior with 6 dark lines, from throat to base of the widened part of the tube; segments 6, oblong-lanceolate, recurved equalling the tube, $\frac{1}{2}$ inch wide to centre, the outer ones minutely cucullate at apex. Stamens 6, inserted on perianth tube a little below the sinuses, free portion of the filaments $\frac{1}{2}$ inch long, arcuate, incurved; anthers oblong, dorsifixed, versatile. Ovary oblong subtrigonous, 3-celled, ovules many, superposed; style longer than the stamens, filiform; stigmas 3, recurved. Ripe seeds not seen.

Habitat: NATAL: Coast and midlands to at least 2000 feet alt; Inanda, 1800 feet alt, *Wood*; Lower Umzimkulu, 300 feet alt, *Wood*. Also in Galla country, East Tropical Africa, *Wakefield*.

Drawn and described from specimens flowered at Botanic Gardens, Durban, February, 1904.

This is one of the largest flowered and handsomest of the genus, and is now becoming a favourite in cultivation. It is usually found in rocky ground, and often in crevices of perpendicular rocks. At one time it was common near Durban, but the bulbs have been carried off by visitors, so that it has almost if not quite disappeared from the locality. It is a suitable plant for hanging baskets, where its brilliantly coloured flowers are very conspicuous. The genus contains about 20 species, all natives of Africa, one of these is in tropical, and all the others in South Africa.

Fig. 1, apex of outer perianth lobe; 2, style and stigmas; 3, stamen, side view; 4, same, back view; 5, longitudinal section of ovary; *all enlarged*.

Cyrtanthus sanguineus, *Hook.*

Gladiolus Saundersii, *Hook.*

PLATE 342.

GLADIOLUS SAUNDERSII, Hook. (Fl. Cap. Vol. VI., p. 158.)
Natural Order, IRIDEÆ.

Corm subglobose, depressed, 1 to 2 inches diameter. Leaves 4 to 8, ensiform, ribbed, but not always strongly so, glabrous, 1 to 2 feet long, ½ to 1 inch broad. Stem including inflorescence 1½ to 3 feet long; spike laxly 4 to 8-flowered; spathe-valves green, lanceolate, 1½ to 2 inches long. Perianth tube, straight or curved, 1 to 1½ inches long, widely opening from throat, limb 6-lobed, lobes mucronulate, the three upper lobes largest, oblong-spathulate, acute, bright scarlet, usually without markings, 1 to 2¼ inches long, 1 to 1½ inch broad; the three lower ones similar in shape, but a little shorter and narrower; all mucronulate, the upper half scarlet, central portion with an irregular band of creamy white, which is usually produced into a spike-like point in upper portion in centre, lower half scarlet mottled with white. Stamens 3, unilateral, reaching nearly to the apex of perianth lobes, filaments filiform, inserted at throat of tube; anthers about 6 lines long, linear, pink, 2-celled, basifixed. Ovary 3-celled, many ovuled, ovules superposed; style filiform, 3-branched, branches short, gradually thickened and flattened at apex. Ripe capsule and seeds not seen.

Habitat: NATAL: Krantz Kop, *McKen*, No. 17; Inanda, 1800 feet alt, *Wood*, No. 1216. Also in Cape Colony and Transvaal.

This is one of the handsomest of our species of Gladiolus, and is not very common. It is usually found in crevices of rocks, with its leaves and flowers hanging downwards, and often in quite inaccessible places. It varies much in size, and also in the markings of the perianth lobes, the creamy white band on the three lower lobes being commonly as described in the text, and the three upper lobes concolourous, but occasionally the spike-like point is absent, and in a living specimen now before me the central upper lobe has two conspicuous creamy white blotches, one near each margin, and one of the lateral lobes has the same markings as the lower lobes, but not so conspicuous. The texture of the leaves also, no doubt, alters according to the situation in which the plant is grown. In the Fl. Capensis they are described as "rigid in texture, strongly ribbed," but in the specimen from which I describe, which was brought from Umzinyati Falls, near Durban, and flowered in the Botanic Gardens, February, 1904. they are as stated above, neither rigid nor strongly ribbed.

Fig. 1, style and stigmas; 2, ovary; 3, stigma much more enlarged; 4, stamen, front view; 5, same, back view; 6, longitudinal section of ovary; *all enlarged.*

PLATE 343.

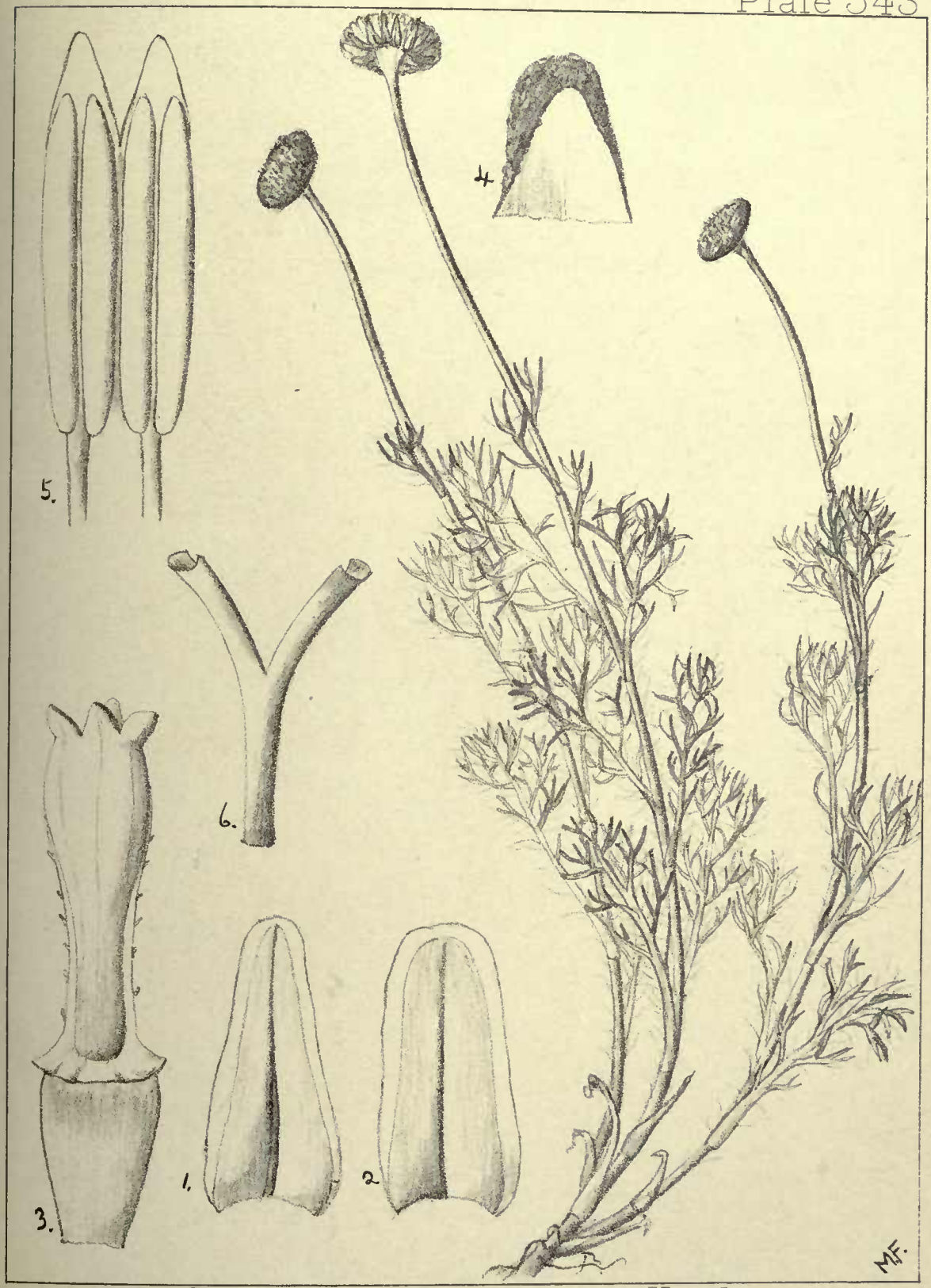
CENIA HISPIDA, Bth and Hk. (Fl. Cap. Vol. III., p. 183, sup Cotula.)
Natural Order, COMPOSITÆ.

A perennial plant with woody roots. Stems many, branched at base, 6 to 12 inches or more long, often curved or ascending, pilose with long white hairs, leafy in the lower half, pedunculoid and glabrous upwards. Leaves, lower petiolate, the petiole flattened, pinnati-partite, the lobes callous tipped, thinly pilose like the stems, upper leaves simply pinnate, subsessile. Peduncles elongate, reaching to 6 inches long, one headed, top-shaped, hollow and lined just under the flower head. Involucral scales, many, in two or three series, obtuse at apex with a dark coloured midvein, and a lacerate, hyaline border. Receptacle, convex, naked, papillose. Heads, homogamous, many flowered, flowers yellow, pappus none, corollas tubular, 4-toothed, sessile, very narrowly winged, glandular on the wings and fringed at base, hooded at apex. Anthers blunt at base. Style arms, truncate; achenes compressed, glabrous.

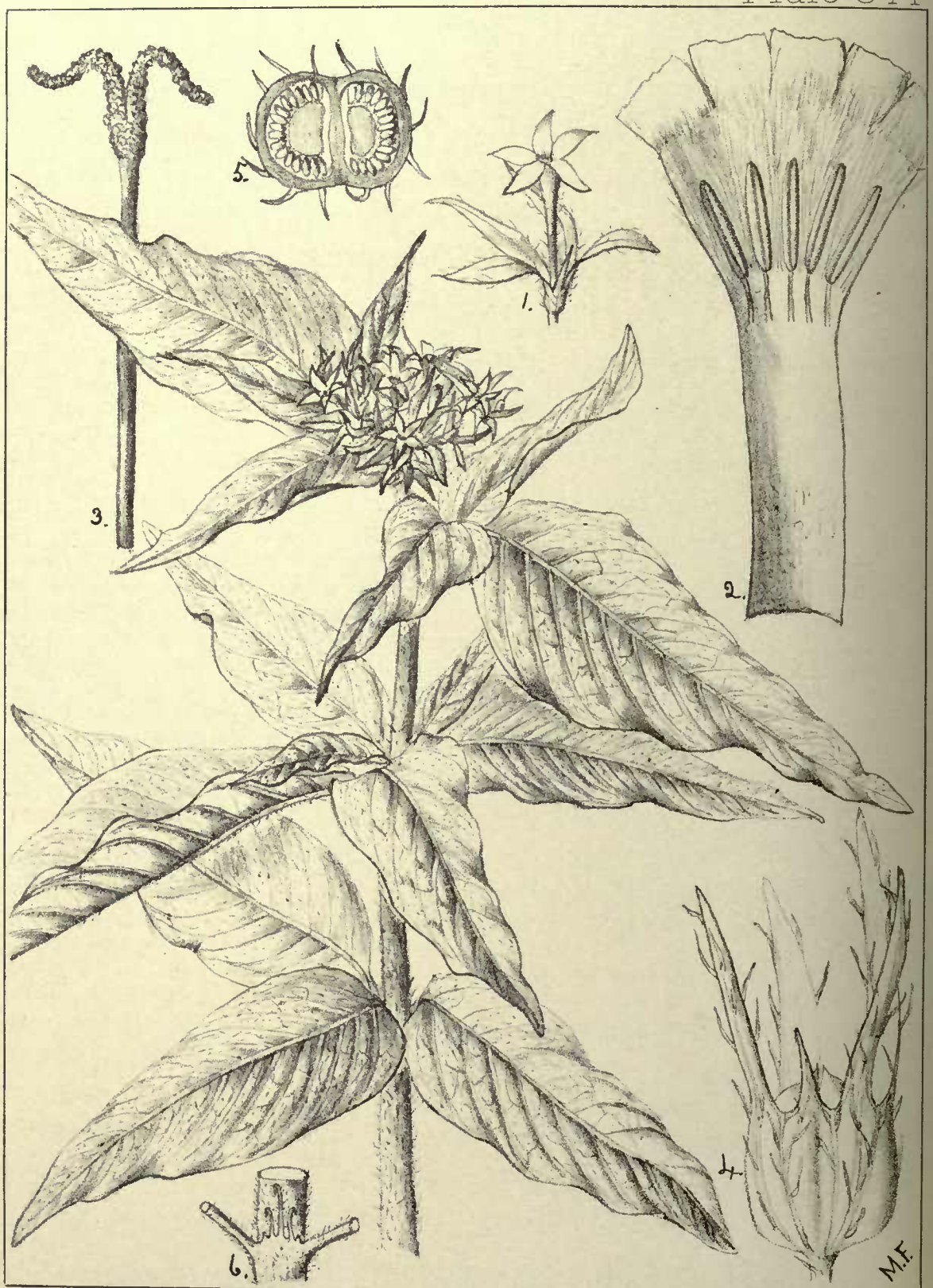
Habitat: NATAL: Oliver's Hoek Pass, 6-7000 feet alt, January, *Wood*, No. 3610; Great Noodsberg, 2-3000 feet alt, April, *Wood*, 4127; near Van Reenen, 5-6000 feet alt, February, *Wood*, No. 9279.

A low growing plant with flower heads 4 to 9 lines diameter; usually found in stony places. The lower leaves are from 1 to $2\frac{1}{2}$ inches long, becoming gradually smaller upwards, the uppermost very small and linear; the style arms are very short and appear to be slit down the side as shown in the drawing. The genus Cenia includes 8 species, all natives of South Africa, but the one here described is so far as known to us, the only one found in Natal. The Flora Capensis enumerates 4 species only, the other 4, including the one here described, will be found under Cotula Sect Discocotula; they are *C. barbata*, *C. Thunbergii*, *C. sericea*, and *C. hispida*. They have been removed from the genus Cotula chiefly on account of the peculiar top-shaped apices of the peduncles, which is a characteristic of the genus Cenia.

Fig. 1, outer involucral scale; 2, inner involucral scale; 3, floret; 4, lobe of corolla; 5, two stamens; 6, portion of style and style arms; *all enlarged.*



Cenia hispida, *Benth & Hook.*



Pentas Wylei, *N.E.Brown.*

PLATE 344.

PENTAS WYLEI, N.E.B. (Kew Bulletin, 1901, p. 123.)
Natural Order, RUBIACEÆ.

An erect undershrub, 2 to 4 feet high bearing cymes of white flowers. Stems erect, much branched, bluntly quadrangular and furrowed on the sides, the younger parts copiously pilose with whitish hairs, older nearly glabrous. Leaves opposite, decussate, stipulate, petiolate, lamina reaching to 5 inches long, 2 to $2\frac{1}{4}$ inches broad, broadly ovate, lanceolate, margins quite entire, acuminate at apex to a blunt point, tapering at base to a winged and channelled petiole, pilose on the veins beneath, upper surface with scattered hairs rising from a tubercular base, petioles $\frac{3}{4}$ to $1\frac{1}{4}$ inches long densely pilose, recurved and slightly thickened at the point. Stipules, several lobed, the lobes subulate, arising from a broad base which connects the opposite petioles, the central one longest, 4 to 5 lines long. Calyx gamosepalous, unequally divided, the lobes 4 to 6, differing much in size, longer than the tube, lanceolate to linear-lanceolate, ciliate with whitish hairs, alternating with 4 to 6 minute glands, tube turbinate, much enlarged and strongly ribbed in fruit. Corolla gamopetalous, 5-lobed, tube cylindrical, widening upwards, longer than the lobes, lobes spreading, minutely cuspidate, the whole corolla 5 to 6 lines long, pilose externally, hairy in throat, valvate in aestivation. Stamens five, inserted just below throat, anthers linear, 2-celled. Ovary inferior, 2-celled, ovules numerous. Style slender, 2-lobed Capsule, sub globose, 8-ribbed, opening at apex. Seeds numerous, angular, minutely and closely pitted; brown.

Habitat: NATAL: Zululand, Ungoya forest, 2000 feet alt, *Wylie* in Herb. *Wood*, Nos. 7590 and 8480.

The genus Pentas includes 10 species, of which 7 are natives of Tropical Africa, 2 of Madagascar, and the one above described, which is so far as known to us the only one in Natal. It has only been found in the locality named, where it grows in light shade in the forest. The drawing was taken from a young plant in the Botanical Gardens, Durban. In older plants the branches are more elongated, and the internodes are longer.

Fig. 1, a flower; 2, tube of corolla opened, showing insertion of stamens; 3, style and stigma; 4, capsule; 5, transverse section of ovary; 6, node of stem with stipules, natural size; *all but Fig. 6 enlarged.*

PLATE 345.

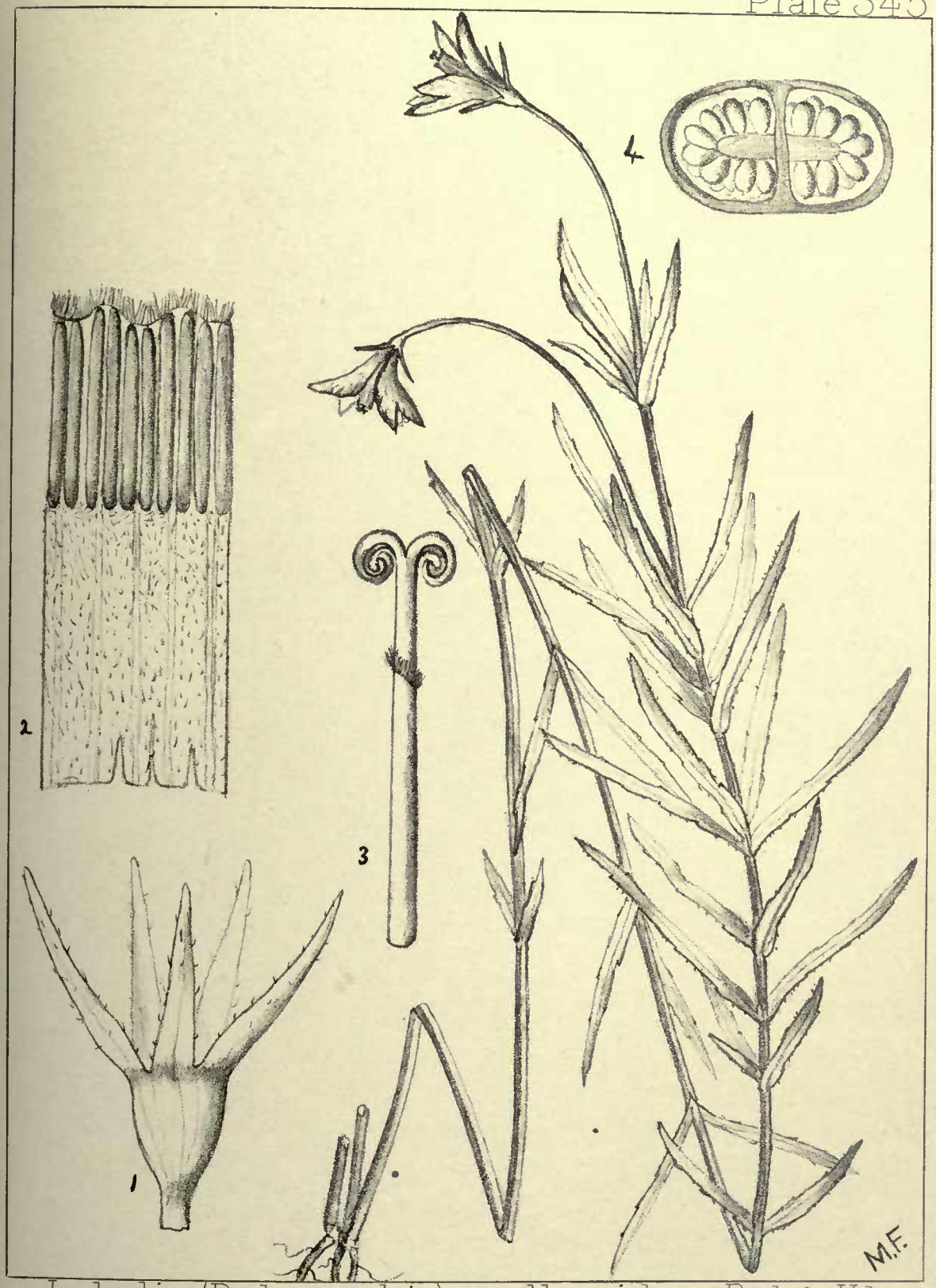
LOBELIA (Dobrowskia) STELLARIOIDES, Bth and Hook. (Fl. Cap. Vol. III., p. 550, Sub-Dobrowskia.)
Natural Order, CAMPANULACEÆ.

A weak, scantily-branched plant bearing yellow flowers. Stems slender, angular, glabrous, decumbent, or ascending, sometimes branched, 1 to 2 feet long. Leaves opposite, sessile, or very shortly petiolate, linear, margins scabrous with curved, semitranspareut, minute, white bristles; distantly serrulate, the teeth often curved, hardened, sharply pointed, whitish, 1 to 2 inches long, 1 to 1½ inches wide. Flowers axillary and terminal, yellow, on long slender peduncles, which are sparingly scabrous like the leaves, thickly so in upper portion, and which lengthen in fruit to 2 inches or more. Calyx gamosepalous, 5-lobed, tube obconical, much shorter than the lobes; lobes linear, oblong, acute, 3 lines long, lengthening in fruit, the whole calyx scabrous externally. Corolla 5-lobed, the two upper lobes distant almost to base, the three lower ones connate, forming a three-lobed lip, all the lobes acute, the two free ones narrowed to base. Stamens 5, filaments and anthers connate, all the anthers bearded at tip. Ovary inferior, 2-celled, many ovuled.

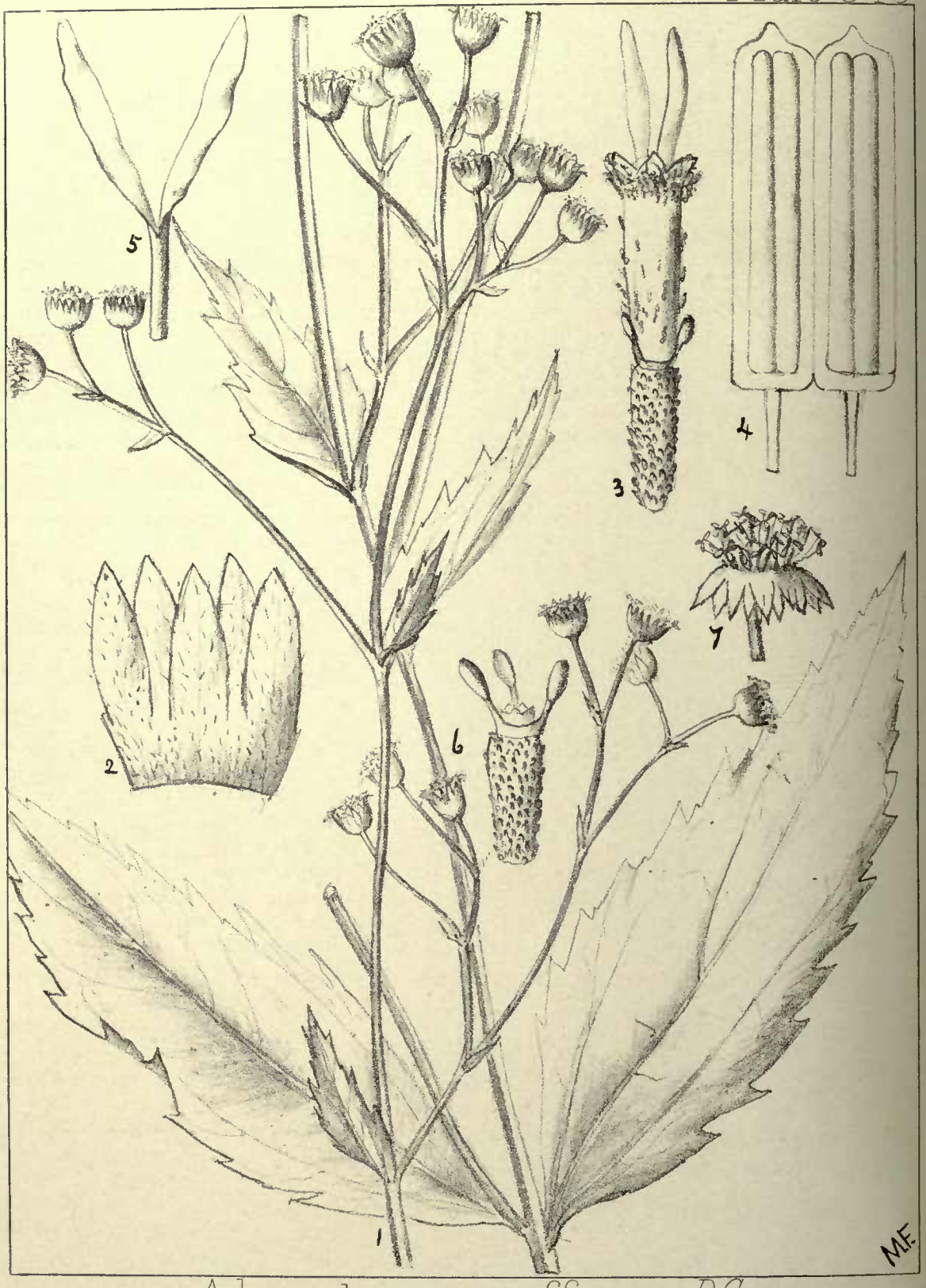
Habitat: NATAL: Zululand, *Cooper*, No. 1137; *J. Sanderson; Gerrard & McKen*, No 1438; Inanda, 1800 feet alt, December, *Wood*, No. 727; near Sydenham, 300 feet alt, October, (*Govt. Herb.*, No. 3769); N'goya, Zululand, 1-2000 feet alt, May, *Wood*, No 3866 (fl. yellow); N'goya, Zululand, 1-2000 feet alt, April, *Wylie* (*Wood*, No. 9329); also in Kaffraria.

The old genus *Dobrowskia*, to which the plant formerly belonged, has now been merged in Lobelia. It included about 15 species, of which 5 were described in the Fl. Capensis as South African, and of these, two at least have been found in Natal. In the Fl. Capensis the flowers are said to be blue, and in the specimens collected in Natal they are so, but in the Zululand specimens they are certainly yellow. A specimen in the Govt. Herbarium collected at Pigg's Peak, Swaziland (*Galpin*, No. 1334), bears flowers which on Mr. Galpin's ticket are said to be "mauve." In Natal and Zululand this plant is usually found in moist places.

Fig. 1, calyx and ovary; 2, staminal tube opened; 3, style and stigma; 4, cross section of ovary; *all enlarged.*



Lobelia (Dobrowskia) stellaroides, *Bth.& Hk.*



Adenostemma caffrum, *DC.*

PLATE 346.

ADENOSTEMMA CAFFRUM, D.C. (Fl. Capensis, Vol. III., p. 57.)
Natural Order, COMPOSITÆ.

An erect herbaceous plant bearing white flowers. Stem quadrangular, stout, branching, pubescent, reaching to 4 feet high. Leaves opposite, petiolate, ovate to ovate-acuminate, unequal at base, gradually tapering to apex, 3 to $5\frac{1}{2}$ inches long, 2 to 3 inches wide, margins irregularly, deeply and sharply toothed, the teeth callous at tip, glabrous except for a few minute scattered hairs on the veins especially beneath. Petioles up to 1 inch long, shorter upwards, the uppermost subsessile. Inflorescence in loose terminal, spreading, pubescent panicles, the pedicels $\frac{1}{4}$ to 1 inch long, bracts small, linear. Heads, many flowered, homogamous. Receptacle flat, naked, honeycombed. Involucre campanulate, after flowering strongly reflexed, its scales sub-biseriate, connate at base, oblong, obtuse, pubescent externally, occasionally with a sinuate linear, ciliate bract thickly covered with white moniliform hairs Anthers linear, 2-celled, apiculate. obtuse at base. Style arms long exserted, flattened, linear. Achenes oblong, glandular. Pappus of 3 to 5 bristles, each tipped with an oblong, glutinous gland.

Habitat: NATAL: *Gueinzius*, No. 347; *Gerrard & McKen*, No. 313; Inanda, in swamp, 1800 feet alt, January, *Wood*, No. 322; near Umhlali, in moist ground, 500 feet alt, May, *Wood*, (Gov. Herbarium, No. 3733); Entumeni, Zululand, 2-3000 feet alt, March, *Wylie*.

The genus Adenostemma includes about 18 or 20 species widely dispersed in warm regions. Of these, two are natives of Natal, one of which is also found in Kaffraria. Another one, *A. natalensis*, is said in the Fl. Capensis to be a synonym of *A. Dregei*, but in the Index Kewensis it is kept a separate species. It is unknown to us. These plants are usually found in very moist ground. When the achenes are ripe the involucre becomes much reflexed, the hold of the achenes upon the receptacle is relaxed, and the glands on the pappus bristles become very glutinous, so that the achenes adhere to passing animals or to clothing on the very slightest touch. The action of the sun and wind soon dries the glutinous substance, so that the achenes are not carried far, as in the case of *Bidens pilosa* (the "Black Jack"), usually falling into the damp soil where they were grown, as if carried on to exposed or dry ground plants would scarcely be likely to come to maturity even if the seeds were to germinate in such a situation. We have never seen either of the plants away from moist ground or the edge of swamps It is interesting to notice that the corollas do not fall away from the receptacle singly as is usually the case, but being matted together by the moniliform hairs under the lobes they fall away in a compact mass, each one carrying away the style in its centre.

Fig. 1, upper portion of panicle, natural size; 2, portion of involucre; 3, floret; 4, the stamens; 5, style and style arms; 6, achene; 7, head showing ripe achenes; *all enlarged.*

PLATE 347.

JUSTICIA PETIOLARIS, E.M. (Fl. Cap. Vol. V., p. 59.)
Natural Order, ACANTHACEÆ.

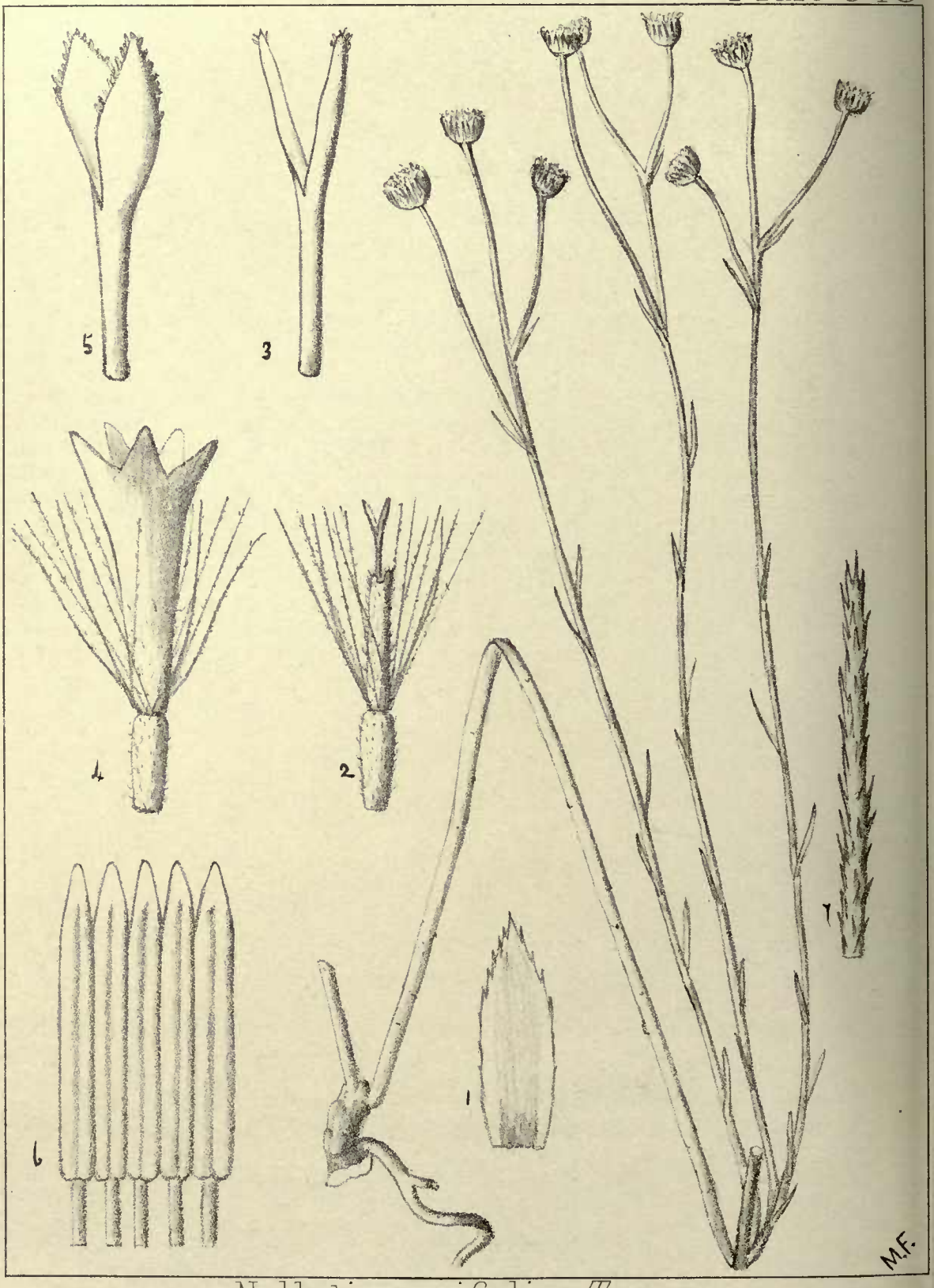
A branching undershrub, Stems, 2 to 4 lined below, 2 to 4 angled upwards, pubescent with whitish deflexed hairs upwards, sub-glabrous in lower portion, a little swollen just above the nodes. Leaves, opposite, petiolate, ex-stipulate, 2 to 8 inches long including the petiole, 1½ to 3 inches wide, ovate-acuminate, obtuse at apex, unequal at base and gradually tapering to the petiole, along which it is decurrent as a very narrow wing on each side, almost glabrous on the lamina, but with numerous hairs on the veins, which are strigose on the upper surface, but erect on the lower one, margins entire. Infloresence in axillary and terminal, many flowered spikes, which are more or less interrupted at the base. Calyx 5-parted to base, segments lanceolate, acute, ciliate with long white hairs, which are glandular at tip, bracteoles ⅕ in. long, linear, ciliate like the calyx lobes. Corolla 2-lipped, lower lip much the largest, 3-lobed for one-third of its length, deflexed, 4 to 5 lines long, 4 lines wide, the lobes sub-equal in length, but central one broadest, pale blue, dark lined. middle lobe with a fine red line in the centre, throat rugose, pale pink, or whitish with dark purplish lines; upper lip erect, hooded, concave, 2-fid at apex, dark lined; the whole corolla except the lower lobe externally pink; lower lobe whitish, faintly lined. Stamens 2, anther cells superposed, pubescent, one much below the other, the lower ones spurred; pollen ellipsoid with 2 stopples, tubercles obsolete (Fl. Cap.), cells purple. Ovary superior, seated in a cup-shaped 2-3-toothed disk, 2-celled, cells 2-ovuled; style elongate, thinly pubescent, unequally 2-lobed, lobes very short. Capsule ⅓ inch long, glabrous, 4-seeded; seeds tubercular-rugose.

Habitat: NATAL: *Gerrard*, No. 1896; Indulindi, Zululand, 1-2000 feet alt, April, *Wood*, No. 3953; near Durban, April, *Wood*; near Port Shepstone, April, *Dr. Dimock Brown*, No. 467 (Gov. Herbarium, No. 7592).

In Vol. III. of this work Plate 216, another species of this genus (*J. protracta*), is described. Since that time the name has been altered to *J. pulegioides* (E. Mey). It was also stated that the genus included about 100 species. In the Part of Fl. Capensis where this plant is described it is now stated that the genus contains about 200 species, and that if the genus Dianthera be included, as has been proposed, it will number at least 300 species. The plant here described does not appear to be very common, and as there would seem to be some doubt as to the colour of the flowers I have described it at some length from freshly gathered specimens. Dr. Dimock Brown on his ticket also gives the colour as blue.

Fig. 1, calyx and bracteoles; 2, corolla opened; 3, stamen; 4, ovary and disk; 5, style and stigma; 6, calyx and capsule; 7, longitudinal section of capsule; 8, seed; *all enlarged.*

Justicia peliolaris, *E. M.*



Nolletia rarifolia, *Turcz.*

PLATE 348.

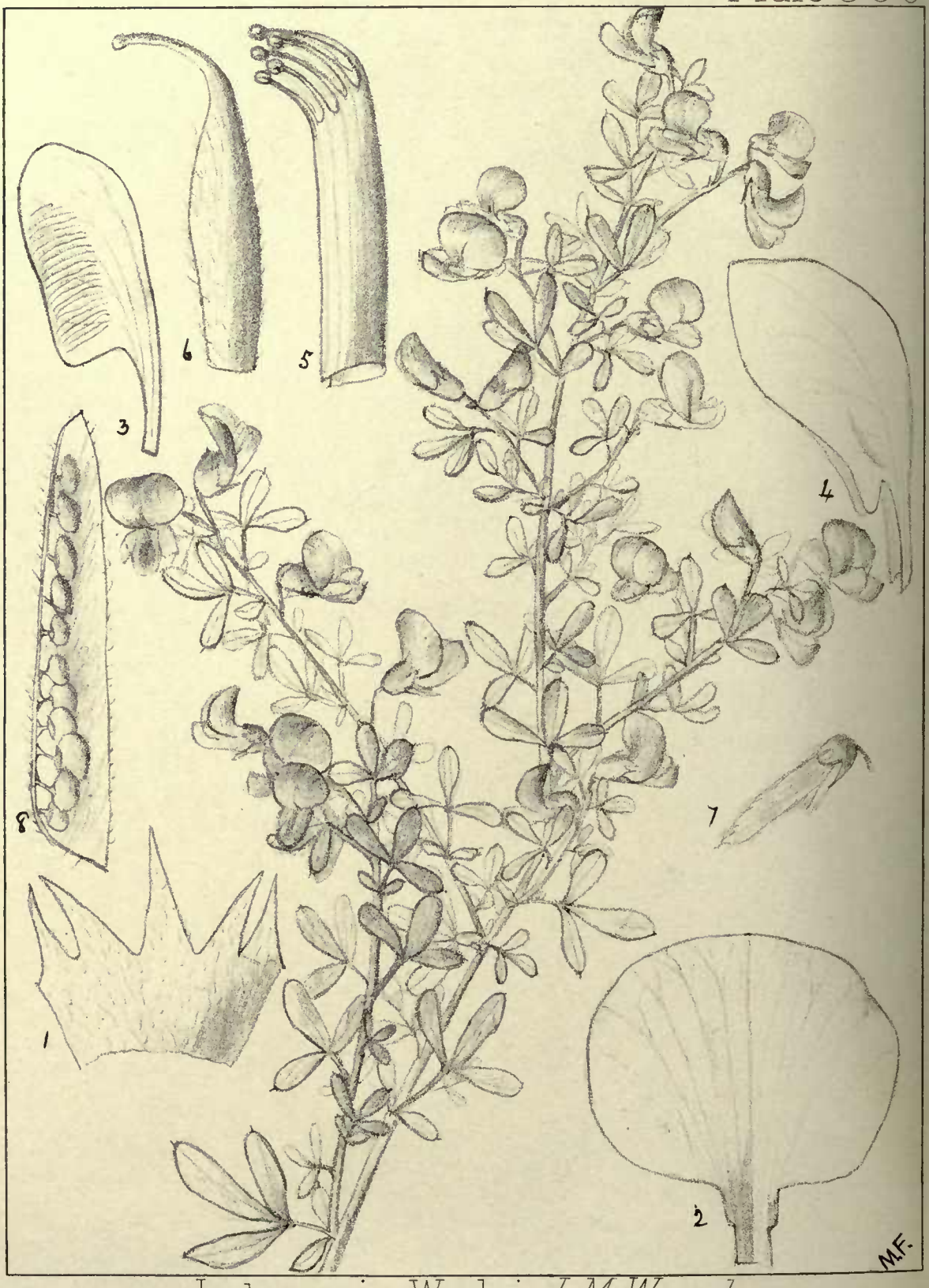
NOLLETIA RARIFOLIA, Turcz. (Fl. Cap. Vol. III, P. III, sub Leptothamnus).
Natural order, COMPOSITÆ.

An erect sparingly leafy plant with yellow flower heads. Root woody. Stems 12 to 18 inches high, branching from above the base, striate. Leaves sessile, linear, quite glabrous, entire, distant, acute; 3 to 9 lines long, less than 1 line wide, quite erect, $\frac{1}{2}$ to $1\frac{1}{2}$ inches apart. Heads solitary at ends of the branchlets forming a very loose corymbose inflorescence. Heads many-flowered, heterogamous, discoid. Receptacle flat, naked, pitted. Involucral scales in two or three series, linear-oblong, acute, scarious, innermost longest. Florets, outer row female, filiform, unequally 4-fid at apex, one or two lobes longer than the others; style, bifid with subulate lobes; stigmas minutely glandular. Disk florets perfect, tubular, 5-lobed at apex; styles bifid; branches compressed, acute, more glandular than those of the ray florets; anthers obtuse at base. Pappus bristles in one series, barbed, rough. Achenes oblong, compressed, minutely hairy.

Habitat: NATAL: Slopes of Drakensberg, 4-5000 feet alt, January, *Wood*, No. 3597; amongst grass near Mooi River, 4200 feet alt, November, *Wood*, No. 4065; N'Tondweni, Zululand, 0-800 feet alt, December, *J Wylie* (*Wood*, No. 9424); also in Transvaal, Magaliesberg, *Burke & Zeyher*, Nos. 802 and 103.

Of the genus Nolletia, which includes Leptothamnus, 4 species only are enumerated in the Index Kewensis, 3 of which are South African, and 1 in N.W. Africa, the species here figured being the only one known to us as having been found in Natal. It is an inconspicuous plant and has no known useful properties.

Fig. 1, involucral scale; 2, ray floret; 3, style and stigmas of same; 4, disk floret; 5, style and stigmas of same; 6, stamens; 7, pappus scale; *all enlarged.*



Lotononis Wylei, *J.M.Wood.*

PLATE 350.

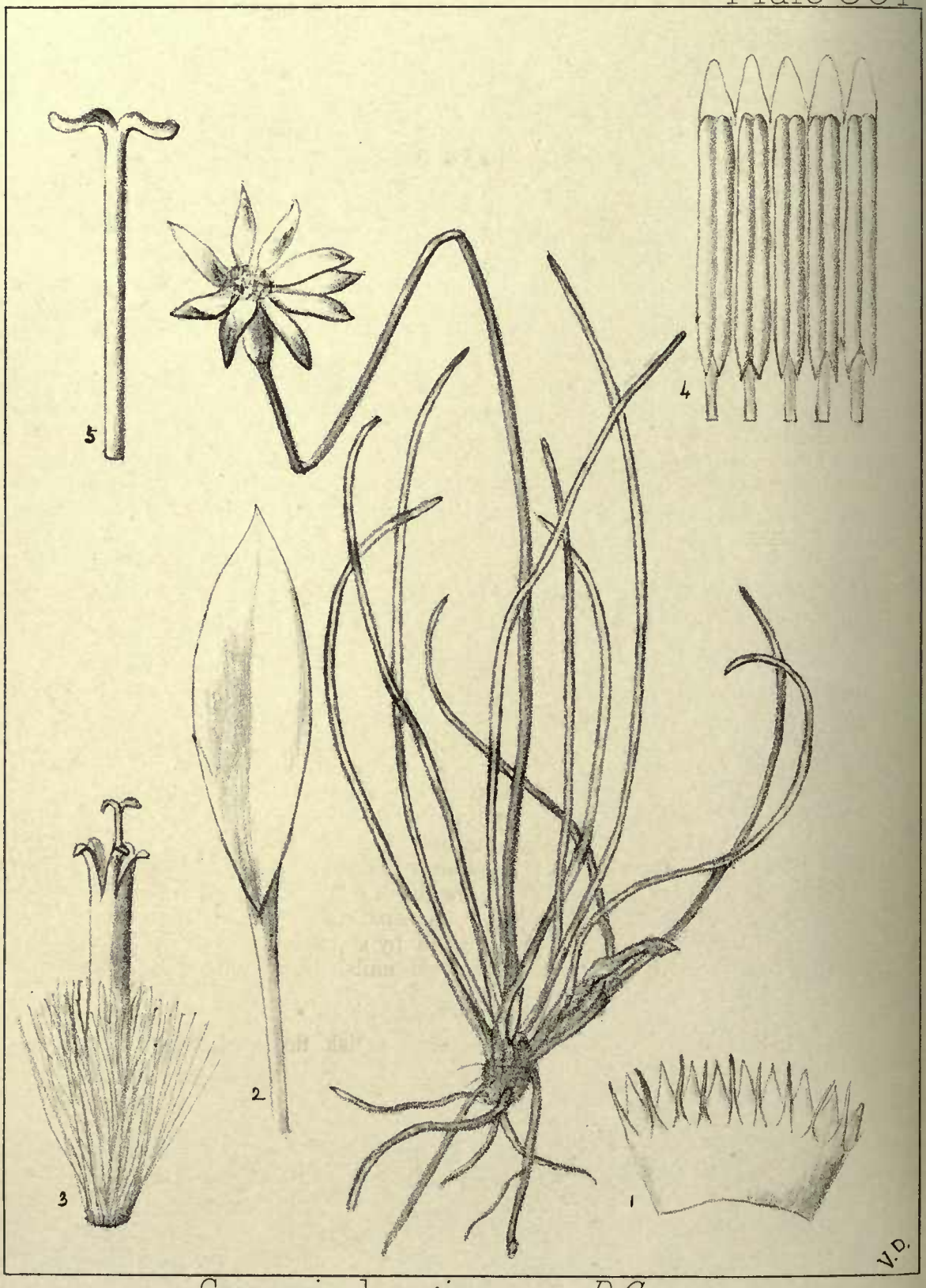
LOTONONIS WYLEI, J. M. Wood, n. sp.
Natural Order, LEGUMINOSÆ.

A much-branched, densely-leafy undershrub, reaching to 4 or 5 feet in height, and bearing a profusion of blue flowers. Stems and branches finely and closely silky pubescent with minute white hairs. Leaves trifoliate, petiolate, stipulate; leaflets oblanceolate, mucronate, entire, subsessile, $\frac{1}{4}$ to 1 inch long, 1 to $2\frac{1}{4}$ lines wide in centre, pubescent with silky white hairs above, more densely so beneath; petiole $\frac{1}{8}$ to $\frac{3}{4}$ inch long, pilose; stipules in pairs, resembling the leaflets, oblong, 2 to 4 lines long. Flowers axillary or terminal on the short branchlets, in 4 to 5 flowered racemes or solitary; peduncles $\frac{1}{2}$ to 1 inch long, pubescent, pedicels 2 to 3 lines long. Calyx gamosepalous, silky, tube campanulate, limb unequally 5-fid, the lowest segment longer than the others, equalling calyx tube, the 4 upper ones connate in two 2-fid pairs; all acute. Corolla papilionaceous; vexillum broadly rotund, silky pubescent externally; alae oblong, auricled, cross-ridged on face, shorter than vexillum; carina obtuse, equalling vexillum. Stamens monadelphous in a split tube; anthers dissimilar, alternate ones shorter and versatile, others longer and basifixed. Ovary subsessile, pilose, many ovuled; style curved; stigma oblique, capitate. Legume narrowly linear, pilose, acute, straight, 1 inch long, slightly compressed, subtended by the persistent calyx; seeds glabrous, subglobose, light brown.

Habitat: NATAL: Entumeni, Zululand, 2-3000 feet alt, April, *J. Wylie* (*Wood*, No. 8962); same locality, March, *J. Wylie* (*Wood*, No. 9442).

This plant was first gathered by Mr. Jas. Wylie, now Curator of the Durban Botanic Gardens, and so far as at present known it is confined to the locality given above. The aspect of the plant is very much that of a Crotalaria, but the pod is not inflated, and the flowers are blue, not yellow, as in most of the Natal Crotalarias. It is very floriferous and well worth cultivation.

Fig. 1, calyx opened; 2, vexillum; 3, ala; 4, carina; 5, stamens; 6, ovary, style, and stigma; 7, young legume; 8, valve of legume with immature seeds; *all except Fig. 7 enlarged.*



Gazania longiscapa, *D C. var.*

PLATE 351.

GAZANIA LONGISCAPA, D.C., var (Fl. Cap. Vol. 3, p. 474).
Natural Order, COMPOSITAE.

A perennial herb, bearing yellow flowers. Leaves many, all radical, narrowly linear, widened and sheathing at base, glabrous and green on upper surface, deeply channelled on face, lower surface covered with dense white tomentum except the midrib which is green, glabrous, very prominent and occupies nearly half the breadth of leaf, margins scabrous with minute horny prickles; 6 to 9 inches long, 1 to 2 lines wide in upper portion, gradually tapering to a channelled petiole, which in the lower and sheathing portion reaches 3 lines in width. Peduncles much longer than the leaves, 1-headed, glabrous. Heads radiate, involucral scales in 2 series, connate half way in a cup which is truncate, or intruse at base, outer scales longest, subulate, inner ones a little broader, all sparsely ciliate. Ray florets, neuter, unilabiate: disk florets tubular, 5-toothed, perfect. Pappus of very delicate, scarious, lanceolate, toothed scales completely hidden in the wool of the achene, and connate at the base. Anthers sagittate at base. Style arms rounded and truncate. Achenes completely covered with long silky hairs.

Habitat: NATAL: Zululand, Ginginhlovu, ca 500 feet alt. August, *J. Wylie*, (*Wood* No. 8777). Same locality, August, *J. Wylie*. (*Wood*, No. 9405).

The genus *Gazania* contains about 24 species, all natives of South Africa, and at least 4 of these are found in Natal. The species here figured appears to be a variety of *G. longiscapa*, from the type of which species it differs by its much narrower leaves which in our specimens are all quite simple, not pinnatifid, and also by its smaller flower heads. It is known to the natives as u-Benhle; they gather the leaves and place them for a few days under a heap of ashes, and when decayed they beat them until the fibre is separated, which is twisted into fine cords and used for making the fringe worn by the young girls. Sometimes the fibre is scraped from the leaf with the finger nails, and twisted without previous rotting.

Fig. 1, involucre opened; 2, ray floret; 3, disk floret; 4, stamens; 5, style and stigma. *All enlarged.*

PLATE 352.

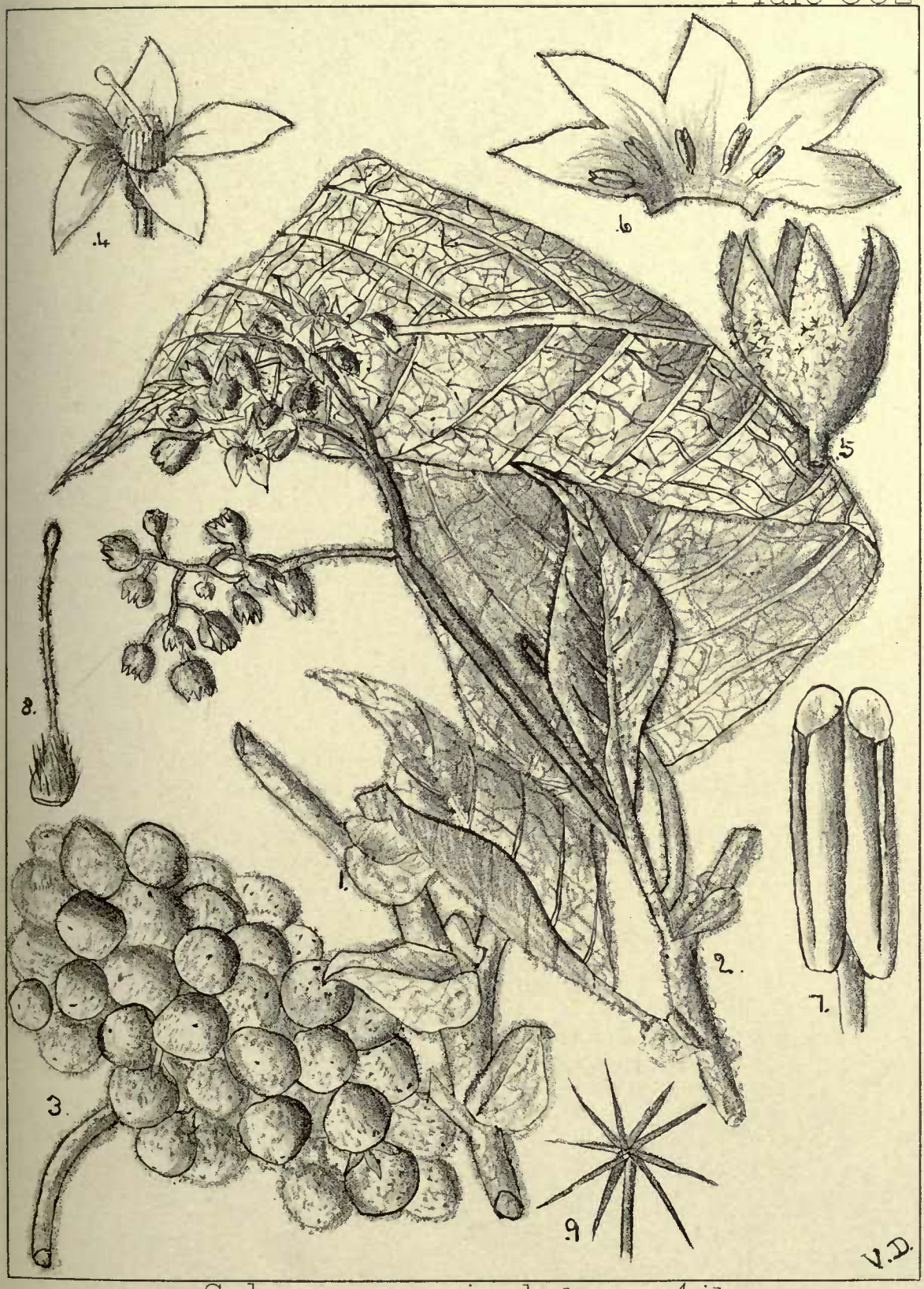
SOLANUM AURICULATUM Ait. (Fl. Cap. Vol. IV., p. 94).
Natural Order, SOLANACEAE.

An unarmed shrub reaching to 12 or 15 feet in height, and much branched, "branches, inflorescence, petiole and under sides of leaves densely covered with stellate, floccose tomentum." Flowers violet-purple, with a central 5-rayed white star, one ray of which extends along $\frac{3}{4}$ of the lobe. Leaves oblong or ovate-oblong, entire, accuminate, cuneate at base, midrib and veins very prominent beneath, pubescent with stellate hairs above; 8 to 12 lines long by 3 to $4\frac{1}{2}$ wide; petiole 1 to 2 inches long, terete; young axillary leaves, ovate to subrotund, curved resembling stipules. Inflorescence terminal, corymbose, many-flowered; peduncles up to 4 inches long. Calyx gamosepalous, campanulate, 5-lobed, tube campanulate, lobes triangular, obtuse, the whole calyx $2\frac{1}{2}$ inches long. Corolla gamopetalous, 5-lobed, lobes oblong, acute, spreading to 7 to 8 lines diameter, glabrous above, finely stellate pubescent beneath. Stamens 5, erect, inserted in throat of tube, filaments very short, anthers 2-celled, opening by two oblique, apical pores. Ovary 2-celled, many-ovuled, clothed with straight simple hairs: style longer than stamens; stigma clavate. Fruit a globose, many-seeded berry, 5-8 lines diameter, stellate-tomentose, yellow when ripe. Seeds small, yellow, rugose.

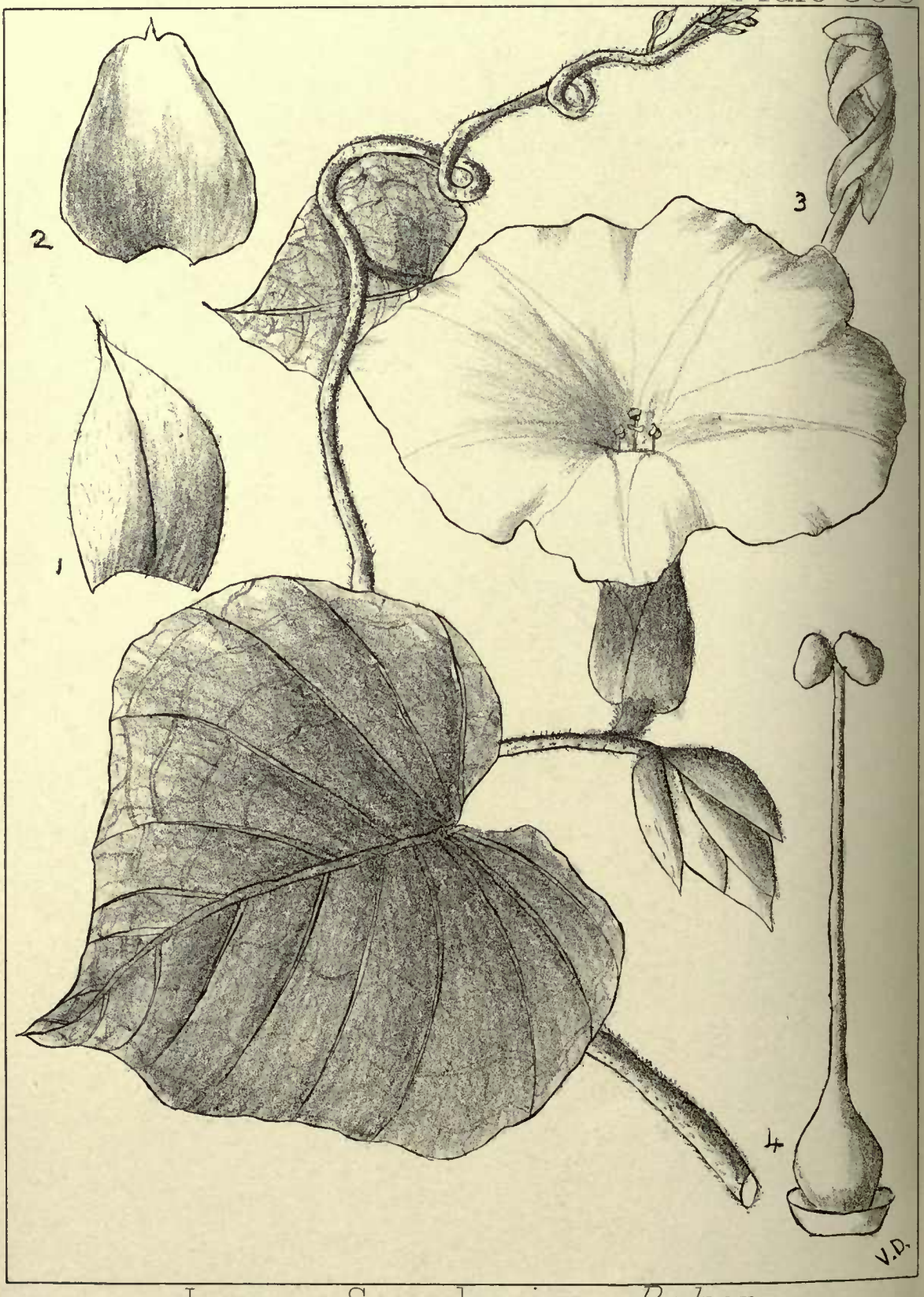
Habitat: NATAL, near Durban, 100 feet alt. *Wood* No. 119: 1298: "Also in Mascarene Islands and Central and South Tropical America."

This is the tallest species of the genus that we have in Natal, often having the appearance of a small tree; it is most probably an imported species, though it has evidently been in the Colony for many years as Wood's 1298 was collected in 1881. It is confined to the Coast districts, and was, about 1881, only found in the vicinity of towns, since that time it has become more widely distributed. It is known to the natives as im-Totovani, they do not use it in any way, but say that birds are very fond of the seeds.

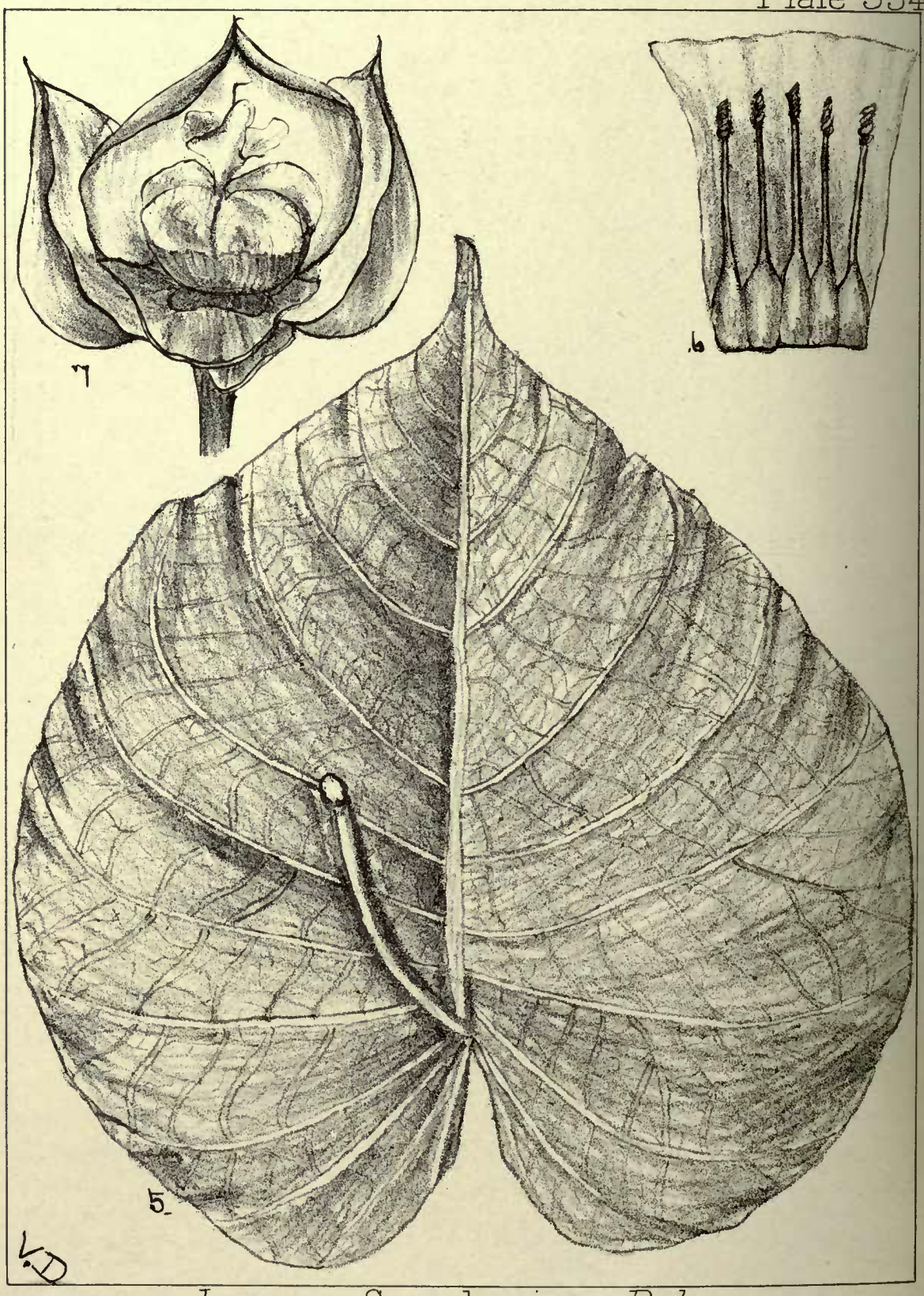
Fig. 1, lower portion of branch showing leaves; 2, upper portion of branch with inflorescence; 3, fruit; 4, flower; 5, calyx; 6, corolla opened; 7, stamen; 8, pistil; 9, stellate hair from leaf. Except figures 1, 2, 3, *all enlarged.*



Solanum auriculatum, *Ait.*



Ipomœa Saundersiana, *Baker.*



Ipomoea Saundersiana, *Baker.*

PLATES 353, 354.

Ipomoea Saundersiana, Baker (Fl. Cap. Vol. IV., p. 60).
Natural Order, Convolvulaceae.

A strong climber with large leaves, milky sap and bearing pure white flowers which are open all the day. Stems, young ones finely pubescent, older glabrous; wide climbing. Leaves cordate, margins entire, glabrous above, pubescent on veins beneath: main veins very prominent beneath and running from midrib to margin: reaching to 8 or 10 inches long and wide: petiole 4 to 7 inches long, minutely and sparsely pubescent. Inflorescence of few flowered axillary cymes. Bracts 2, oblong-ovate, cuspidate, minutely pubescent externally and finely ciliate, deciduous. Buds oblong-acuminate. Sepals 5, concave, broadly ovate, obtuse with a minute cusp, glabrous, 1½ inch long and wide. Corolla funnel-shaped, margin entire but unequal, recurved; 3¼ to 4 inches long and wide, tube subcylindrical. Stamens 5, on corolla tube at base, filaments broad, concave and finely pubescent in lower portion, subulate and glabrous above, half as long as corolla; anthers 2-celled, spirally twisted. Style filiform; stigma 2-lobed, lobes subglobose. Ovary 2-celled, cells 2-ovuled. Capsule globose, glabrous, ¾ to 1 inch diameter, seeds subglobose, black, very minutely puberulous; 4 lines diameter.

Habitat: Not known with certainty. In Bot. Gardens, Durban, cult. *Wood* No. 1635.

Drawn and described from a plant which flowered in Botanic Gardens, Durban, June and July, 1904, the seed having lain dormant in the ground for at least 17 years; the locality where the plant was first collected is doubtful, but it was understood that the original plant which flowered in the Gardens for the first time about 1882, and died a year or two afterwards, was raised from seeds given to the former Curator by the late Mrs. Saunders, and we understood that she had received them from the "interior of Africa." We have never met with the plant in a wild state in Natal. In the Flora Capensis it is stated that it is the only South African species belonging to the Section *Operculinum*, distinguished by the "anthers being spirally twisted, and the capsule having a lid which falls off when ripe." The plant has been under daily observation during the flowering and fruiting season, and special notice has been taken of the ripening of the large capsules. After the corolla and bracts have fallen away the sepals close tightly and remain so for many days, then gradually opening and becoming dry; it is then seen that the exterior portion of the upper half of the capsule (exocarp) has become quite detached and shrivelled, and has the remains of the style projecting through its centre, the remaining upper portion of the capsule (endocarp) becoming thin, indistinctly veiny, and papery, so that the large black seeds can be dimly seen, while the lower half of the capsule is thick, opaque and with strongly marked perpendicular veins, the upper portion finally breaking up and releasing the seeds.

Plate 353. Fig. 1, a bract; 2, a sepal; 3, a stamen; 4, pistil; except figs. 1 and 2, *all enlarged.*

Plate 354. Fig. 5, a leaf; 6, lower portion of corolla opened, showing insertion of the stamens; 7, capsule and 3 sepals, the other two removed; *all about natural size.*

PLATE 355.

CASSINIA PHYLICÆFOLIA (D.C.) Wood. (Fl. Cap. Vol III.; p. 204, sub. Rhynea). Natural Order, COMPOSITAE.

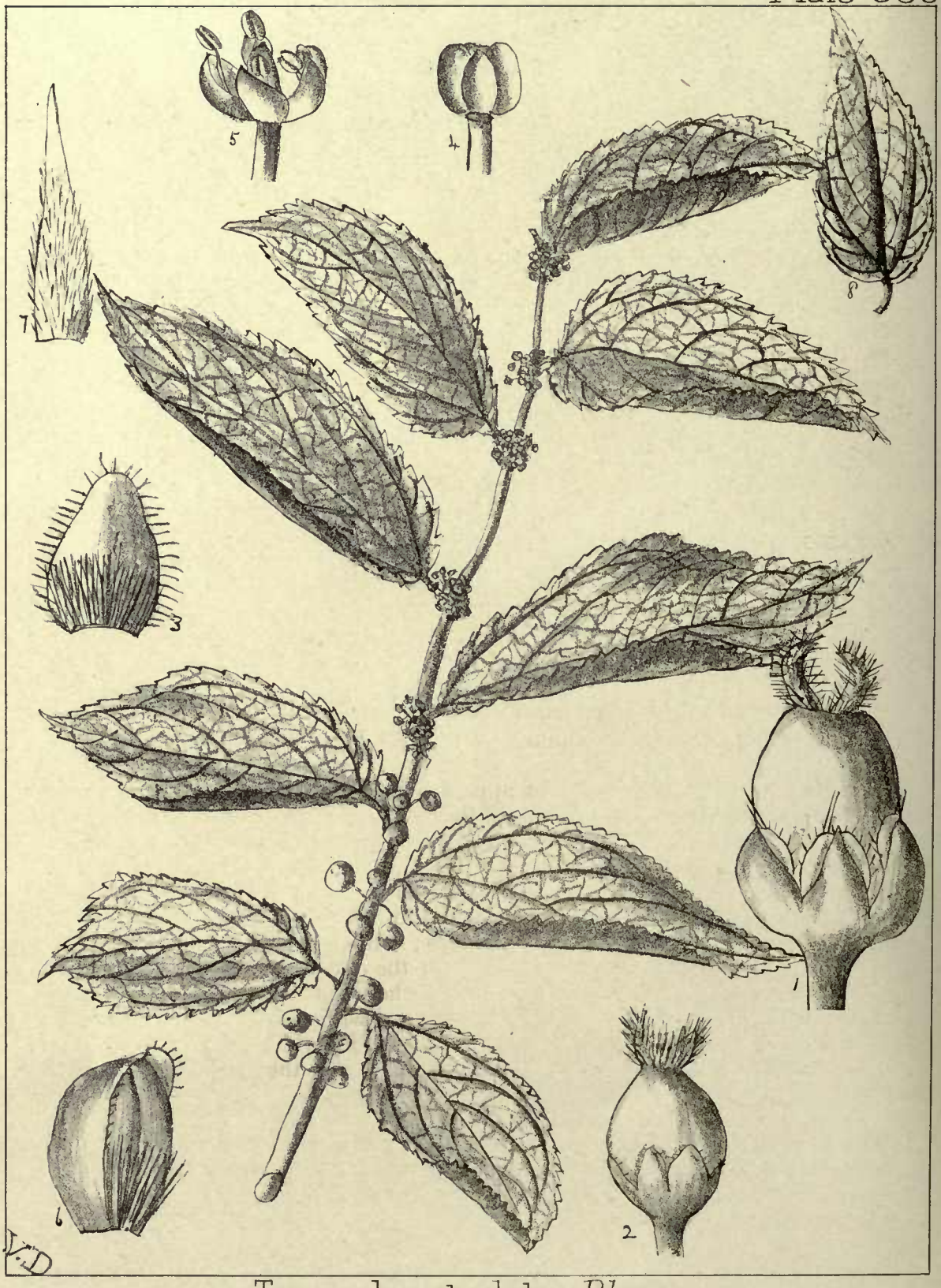
A branching undershrub 2 to 3 feet high bearing yellow flowers, with white tipped involucral scales. Stems and branches terete, canous, and with white woolly pubescence. Leaves alternate, decurrent between the nodes as narrow stem wings; lanceolate, mucronate, entire, densely white tomentose beneath, green and glabrous above, $\frac{1}{2}$ to 1 inch long, $1\frac{1}{4}$ to 4 lines wide. Inflorescence corymbose, the corymbs few flowered. Heads many flowered, heterogamous, discoid. Receptacle with linear, deciduous palae between the flowers. Involucre in several rows, the scales imbricate, densely woolly in lower portion, the inner scales longest, linear-oblong, creamy-white in upper portion, spreading. Florets from 15 to 25. Disk florets most numerous, perfect; marginal ones filiform, female, few. Pappus in one row, bristle shaped, thickened at apex, scabrid. Anthers sagittate or shortly tailed. Style branches truncate. Achenes "obovate-oblong, beakless," minutely downy.

Habitat: NATAL, *Drege; Plant; Guienzius*; *Gerrard* and *McKen*; Spring Grange near Durban, ca 500-800 feet alt., April, *Wood.* (C. Herb 3528). Berea, May, *Wood.*

In the Flora Capensis this plant appears as *Rhynea phylicaefolia*, DC, but the genus *Rhynea* has now been included in *Cassinia*, and its only species, the one under notice, does not appear either in the Index Kewensis or in the supplement to that work now under publication under *Cassinia.* I therefore retain the specific name. With the sole exception of the plant here figured all the members of the genus are natives of Australia and New Zealand, four only being found in the last named country and 13 in Australia. The plant would appear at present only to be known from Natal, but it is quite possible that it will be found also in some of the adjoining Colonies. The native name of the plant is i-Thiela.

Fig. 1, outer involucral scale; 2, inner involucral scale; 3, female floret; 4, perfect floret; 5, three stamens; 6, upper portion of style with stigmas; 7, palea; 8, pappus bristle; *all enlarged.*

Cassinia phylicifolia, *(D.C.) Wood.*



Trema bracteolata, *Blume*.

PLATE 356.

TREMA BRACTEOLATA, Blume. (Harvey's Genera, p. 345, sub. Sponia).
Natural Order, URTICACEAE.

A small tree bearing clusters of green flowers in axils of leaves. Bark rough, branches terete, younger portions finely pubescent. Leaves alternate, petiolate, stipulate, ovate-oblong to ovate-lanceolate more or less unequally rounded at base, gradually tapering to an acute or obtuse apex, margins finely and equally crenate-serrate, very minutely pubescent and dark green on upper surface, lightly coloured and with more pubescence beneath; 3-veined at base, the secondary ones springing from both sides of the mid-vein, but only from the outer side of the lateral ones; 2 to 4 inches long, 1 to $1\frac{3}{4}$ inch wide. Petioles to $\frac{1}{2}$ inch long. Flowers polygamous, in small axillary cymes. Perianth of male and perfect flowers, 5-parted, the lobes concave, compressed and sub-imbricate in bud, ciliate with cottony hairs, otherwise glabrous, 1 line long, of female flowers flat or only slightly concave. Bracts oblong, deltoid, minute, pedicels very short, and pubescent like the bracts, the whole inflorescence as long, or a little longer than the petiole. Stamens 5, opposite perianth segments, filaments as long as perianth lobes; anthers 2-celled exserted, oblong. Styles 2, very short, hairy. Ovary superior, abortive in male flowers, in female and perfect ones surrounded by a ring of cottony hairs, several ovuled, ovules pendulous. Fruit a small globose drupe seated in the persistent perianth, black when ripe, $1\frac{1}{2}$ to 2 lines diameter, crowned by remains of the stigmas.

Habitat: NATAL: Near Durban, *Wood*, Inanda 1800 feet alt., October, *Wood*, 625. Zululand, 6000 feet alt. January, *Davis*,, 109. (Col Herb, 8786).

In "Harvey's Genera" this plant appears as *Sponia*, but that name has now been superseded by *Trema*, it is also said that there are two species in Natal, but so far we have met with this one only. The genus contains some 30 species, which may probably be reduced to about 20. The species are found in tropical and subtropical regions widely dispersed. The flowers are said to be of three forms, staminate only, pistillate only, and perfect, and in Harvey's Genera it is stated that the females are usually on separate twigs; but we find that in the cymes in which female flowers occur they are mixed with the others, but much less numerous. The tree attains a height of 20 to 30 feet, the wood, according to Fourcade, "is moderately light and soft; light yellow tinged with red." The only use to which it is put is for break blocks for wagon wheels, for which purpose it appears to be well suited. The native name is "Nbantini"—and the bark of the tree is used by them as a medicine.

Fig. 1, perfect flower; 2, female flower; 3, perianth lobe of female flower (inner view); 4, bud of male flower; 5, male flower; 6, perianth lobe of male flower with stamen; 7, bract; 8, underside of leaf showing venation; *except fig 8, all enlarged.*

PLATE 357.

CEROPEGIA WOODII, Schltr (Eng. Bot. Jahr., p. 34).
Natural Order, ASCLEPIADEAE.

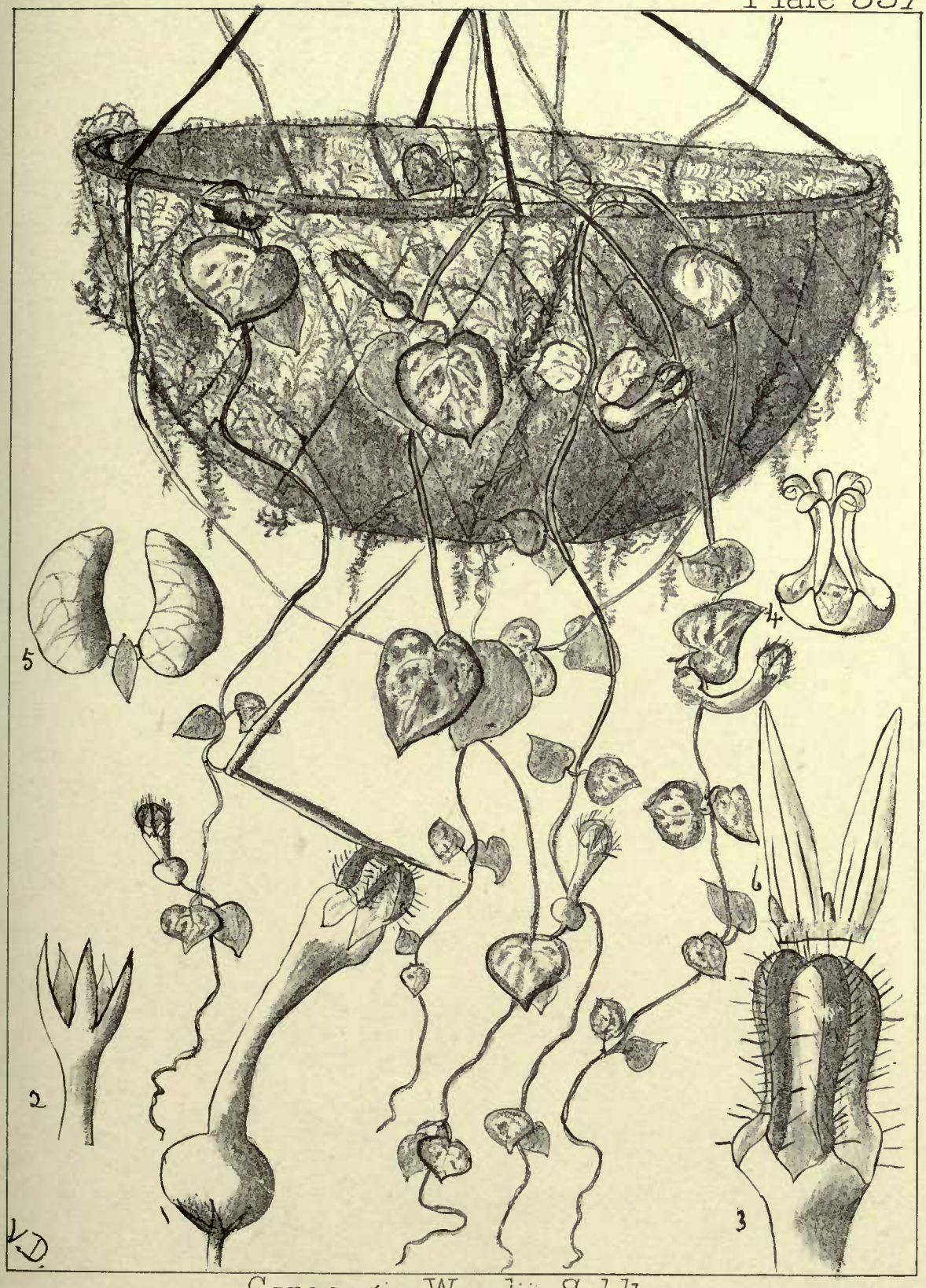
A very slender, many-stemmed plant having leaves which are marbled with dull white, and flowers which are dull pink with deep purplish tips. Glabrous in all parts except the corolla. Stems very slender, decumbent, branching, filiform, distantly leafy, reaching 2 to 3 feet in length. Leaves on slender petioles $\frac{1}{2}$ to $\frac{3}{4}$ inch long, ovate-cordate or reniform-cordate, fleshy $\frac{1}{2}$ to 1 inch long and wide, quite entire, dark green marbled with dull white above, slate colour or dull vinous beneath. Inflorescence axillary, peduncles $\frac{1}{2}$ to $\frac{3}{4}$ inch long, usually bearing two flowers, but sometimes one only. Calyx gamosepalous, deeply 5-lobed, $1\frac{1}{4}$ line long; lobes linear-lanceolate, acute, tube very short, having internally at base 5 delicate, oblong, acute squamae, alternate with the lobes. Corolla urceolate, 9-10 lines long, tube inflated and subglobose at base, 3 lines diameter; then suddenly contracted to 1 line wide, and $2\frac{1}{2}$ at apex; lobes 5, erect, and ovate-lanceolate, obtuse, margins strongly reflexed, ciliate with long hairs; conniving at apex; deep dull purple. Corona double, outer scales connate in a 5-lobed cup, interior ones much larger, erect, linear-lanceolate, acute, narrowed at base, reflexed at apex. Pollinia obliquely oval, obtuse, compressed, caudicles short. Follicles slender, terete, 3 inches long, 1 to $1\frac{1}{4}$ line diameter.

Habitat: GROENBERG, 2000 feet alt. February 1881, *Wood* 1317. Noodsberg 2-3000 feet alt., March, *Wood*.

Drawn from a plant growing in a hanging basket at Botanic Gardens, Durban.

A very graceful plant for hanging baskets, the mottled leaves and prettily coloured flowers make it very attractive when well grown. It may be propagated by division of the roots, by seeds or by bulbils which are produced on the stems near the base; they are subglobose and sometime attain 1 inch in diameter. When first found by the writer the plant was hanging from perpendicular rocks, the stems reaching to fully the length given in the description. It was afterwards found at Noodsberg in shade on surface of the ground, but then the stems did not reach to nearly the length given in the above description, though the plant was a large one with many stems. Several other species of *Ceropegia*, some not yet described, are found in the Colony, but for cultivation this one is probably the most elegant.

Fig. 1, a flower; 2, calyx; 3, upper portion of corolla; 4, corona; 5 pollinia; 6, two calyx lobes showing squamae; *all enlarged.*



Ceropegia Woodii, *Schltr.*

Hibiscus surattensis *Linn.*

PLATE 358.

HIBISCUS SURATTENSIS, Linn (Fl. Cap. Vol I, p. 177).
Natural Order, MALVACEAE.

A rambling plant with large showy flowers, which are light yellow with a deep red velvety centre. Stems, branches, peduncles and petioles armed with hooked tubercles, and reversedly pilose with long white hairs. Leaves varying from deltoid-accuminate to 3-lobed, or 5-lobed, the lobes lanceolate and coarsely serrate in the larger ones, more finely so in the smaller: hispid on both surfaces, veins prominent beneath and those of the larger leaves armed with hooked tubercles, petioles 1 to 3 inches or more long. Stipules broadly semi-cordate, clasping the stem, their margins ciliate with long white hairs, otherwise glabrous: $\frac{1}{2}$ to $\frac{3}{4}$ inch long and wide. Flowers axillary, solitary, pedicels 1 to 2 inches long. Involucre of 10 spathulate leaflets 6 to 8 inches long, spreading horizontally, each having on its upper surface a subulate, erect appendage rising from the base of the lamina, and ciliate with long white hairs; persistent. Calyx 5-lobed; lobes deltoid-accuminate, connate nearly halfway from the base, tube 10-ribbed, midvein and margins of lobes thickened, the whole external surface of the calyx clothed with long, erect, white hairs, which spring from a tubercular deep-red base. Corolla of 5 oblong petals which are connate at base, margin entire, veiny, spreading to $2\frac{1}{2}$ to $3\frac{1}{2}$ inches, yellow with large very dark red blotch in centre, its margin irregular in outline. Staminal column connate with petals at base, and covering the ovary, 5-toothed at apex; stamens many, on surface of the column; anthers 1-celled, staminal column and free portion of the filaments red and clothed with minute glands. Style projecting beyond apex of staminal column, 5-cleft at apex, its lobes reflexed. Stigmas capitate, pink; ovary 5-celled, cells many ovuled, covered with irritant hairs. Capsule 5-celled, enclosed in the persistent calyx, loculicidal.

Habitat: NATAL: Coast districts. *Wood.*

A not uncommon weed in coast districts, the flowers are large and handsome, but the hooked prickles with which it is so plentifully supplied, make it an unpleasant plant to handle. The leaflets of the involucre are very singular, and the Flora Capensis says of them: "The curious form of involucral leaflets which mark these two species (*H. furcatus* and *H. surattensis*) may be referred to what is called "deduplication" and its occurrence in Malvaceae, where the stamens (as Dr. Gray has ably shown) are developed in a similar way, is not without significance."

Fig. 1, involucel and capsule, calyx removed; 2, calyx opened; 3, scale of involucel; 4, staminal column; 5, stamen; 6, style and stigmas; 7, cross section of ovary; *except fig. 1 and 2, all enlarged.*

PLATE 359.

KLEINIA FULGENS, Hook (Bot. Mag. t. 5590).
Natural Order, COMPOSITAE.

A fleshy plant with the aspect of a Kalanchoe and bearing large orange-red flower heads. Stems many from a creeping rootstock, erect, terete, glaucous, 12 to 18 inches high, branched. Leaves crowded at base of stem, alternate, sessile, oblanceolate, either quite entire or distinctly and coarsely serrete in upper third, entire below, veins immersed; channelled on upper surface in lower portion glaucous; lower ones up to 4 inches long by $\frac{3}{4}$ to $1\frac{1}{4}$ wide, smaller upwards, upper leaves linear-oblong, usually entire, lowest sometimes toothed. Flower heads solitary at the end of the branches and branchlets. Heads, discoid, homogamous, all the florets tubular, 5-toothed. Involucre of 8 to 10 scales which are unequal in breadth and concrete for nearly the whole of their length, the free portion triangular and acute. Receptacle flat, pitted. Pappus bristle shaped, in several rows, minutely barbed. Corolla tubular, 5-toothed, the teeth spreading. Anthers sagittate. Style-arms, revolute, tipped with a short cone. Achenes (unripe) cylindrical, quite glabrous.

Habitat: NATAL: Inanda, 1,800 ft., May, *Wood*, No. 556. Umlazi location, June, *Wood*.

Drawn and described from a plant growing in the Botanic Gardens, Durban, which was in flower in May and June.

A very ornamental plant well worth a place in the garden. It bears its flowers profusely at the commencement of winter and remains in flower for some weeks, and even when out of flower it is by no means unsightly. It is found in the midlands of Natal, usually at the edge, or at the foot of stony precipices, but is rather rare.

It was figured in the Botanical Magazine (t. 5590) under the name here given, since that time I understand that it has been removed to *Senecio*, but I have no record of its having been published under that name.

Fig. 1, longitudinal section of involucre; 2, floret; 3, three stamens; 4, style and stigma; *all enlarged.*

Kleinia fulgens, *Hook.*

Emex australis, *Steinh.*

PLATE 360.

EMEX AUSTRALIS, Steinh (Fl. Australiensis, Vol. V., p. 262).
Natural Order, POLYGONACEÆ.

A prostrate plant with monoecious green flowers, and thorny seed vessels, glabrous in all parts. Stems prostrate, reaching to three feet or more long, several from a half woody rootstock, terete, striate, green or tinged with red especially towards the base, bark tough. Leaves alternate, petiolate, stipulate, oblong or oblong-ovate, very obtuse and rounded at apex, broad and truncate or nearly cordate at base, margins quite entire, veins pinnate; 2 to 7 inches long, 1½ to 4½ wide; petiole channelled above, especially in upper portion where it is margined by the decurrent lamina of the leaf; 3 to 7 inches long. Stipules thin and scarious, sheathing the stem but soon deciduous. Inflorescence axillary in whorl-like clusters on an elongated peduncle, some female flowers sessile at its base, a few mixed with the male flowers in lower half of the peduncle, the upper ones all male. Male flowers; perianth 3 to 5-lobed, segments concave. Stamens 3 to 6, filaments equalling perianth segments; anthers oblong, 2-celled. Female flowers; perianth tube turbinate, 6-lobed, 3 of the lobes much larger than the alternate ones and spinescent, the whole perianth enlarged and hardening in fruit. Ovary free, 3-angled, 1-seeded; styles 3, stigmas fringed on inner side, lacerate above. Fruit enclosed in the hardened perianth, the 3 longer lobes of which are divaricate, and spinous, the 3 smaller ones ovate, acute, erect, not spinous.

Habitat: NATAL: Near Durban, 120 feet alt., June, *Wood* No. 9470.

A troublesome weed known to the young people as "Devil's thorn" as the seed vessels lie on the ground one of the thorns is always erect or nearly so, and therefore likely to inflict painful wounds, and the plant would most likely become a pest in sheep farming districts, but fortunately it is at present almost confined to the coast districts, though I have met with it at an altitude of 2,000 feet, and it is quite possible that it may find its way still farther into the highlands of the Colony.

A note in the Flora Australiensis says of the plant. "A common maritime plant in South Africa, differing slightly from the Mediterranean species (E. *spinosa*, Campd.) in the larger fruiting perianth, less rugose, the spinescent segments longer, and the inner erect ones broader and more rounded."

Mr. Andrew Smith, M.A., in his work on medicinal plants of the Cape Colony, says of this plant: "The leaves are boiled and used as a cabbage in biliousness. and also for creating an appetite. They are mildly purgative and diuretic."

Fig. 1, male flower; 2, a stamen; 3, female flower; 4, ovary and stigmas; 5, stigmas enlarged; 6, fruiting perianth; 7, cross section of fruit; *all enlarged.*

PLATE 361.

HERMANNIA MALVAEFOLIA, N. E. Brown (Kew Bulletin, 1895, p. 24).
Natural Order, STERCULIACÆ.

A prostrate sparsely leafy plant, bearing yellow flowers, and stellate tomentose in all parts. Stems several, wiry, elongate terete, 1 to 2 feet or more long. Leaves alternate, petiolate, stipulate, distant, orbicular, finely crenate, cordate at base, stellate tomentose on both surfaces, 3 to 11 lines long and wide; petioles 2 to 7 lines long; stipules ovate, acute, dark brown. Flowers solitary, opposite to the leaves, pedicels 2 to 3½ lines long, bracteate in the middle, bracts clasping. Calyx campanulate, 5-fid to middle, teeth acute, erect, 1¼ line long, tube 1½ line long. Corolla of 5 obovate petals, stellate-tomentose externally in lower portion; their claws incurved. Stamens 5, included, opposite to the petals; filaments flattened above, wider upwards, tuberculated above the middle, sparsely stellate tomentose; anthers 2-celled, opening outwards, acuminate, finely ciliate. Ovary superior, subglobose, 5-celled, cells several ovuled; style elongate, glabrous; stigma obtuse. Capsule not seen.

Habitat: NATAL: On the Drakensberg, Bushman's River, 6,000 to 7,000 feet alt., growing amongst dry grass, July, *Evans*, 55.

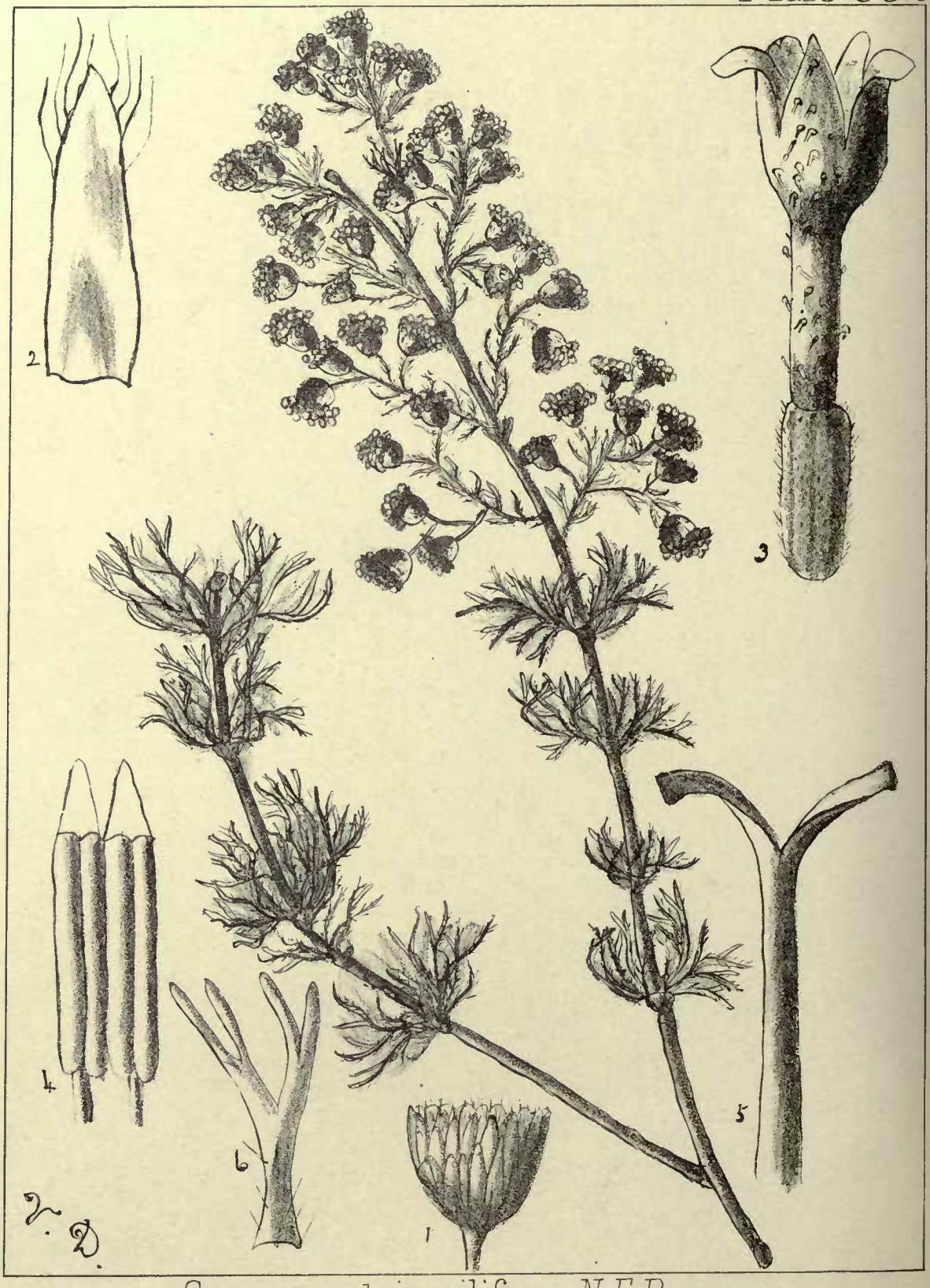
Drawn from Evans's 55.

The only specimens in the Herbarium are not very complete, and have but few flowers, I have therefore had to rely on Mr. Brown's measurements; the largest leaf we have is only 6 to 7 lines in diameter, but Mr. Brown gives the measurement as 3 to 11 lines.

A note in the Kew Bulletin says: "This is quite unlike any other species in the genus; the leaves resemble those of *Malva rotundifolia*, L., but are smaller, and not at all lobed.

Fig. 1, flower; 2, calyx; 3, a petal; 4, a stamen; 5, pistil; 6, cross section of ovary; *all enlarged.*

Hermannia malvaefolia, *N.E.Brown.*



Gymnopentzia pilifera, *N.E.Brown.*

PLATE 362.

GYMNOPENTZIA PILIFERA, N. E. Brown (Kew Bulletin, 1895, p. 26.)
Natural Order, COMPOSITÆ.

A small shrub with yellow flowers, 1 to 3 feet high, sparingly branched at base or simple. Stem and branches subterete or somewhat angular, erect, rough with the clasping bases of fallen leaves, younger portions pilose, older glabrous. Leaves opposite, exstipulate, crowded on the stem and branchlets, which are $\frac{3}{4}$ to 1 inch long; bilobed to the middle, lobes linear, subterete, one or both forked, pilose with long white hairs at base; 5 to 7 lines long, $\frac{1}{2}$ line wide. Infloresence corymbose, the corymbs few headed on short branches or terminal. Heads discoid, monogamous, shortly pedicelled, $2\frac{1}{2}$ to $3\frac{1}{2}$ lines diameter. Involucre hemispherical, of many lanceolate acute scales in three series, the scales brown margined, 1 line long, the upper ones ciliate; receptacle convex, naked. Pappus none. Corolla longer than the involucral scales, tube cylindrical, minutely glandular externally, suddenly widening in upper portion; limb 5-lobed, lobes short, subacute. Anthers bilobed at base. Style arms flattened, channelled in upper portion, truncate, young achenes terete, 10-ribbed, puberulous, ripe achenes not seen.

Habitat: NATAL: On the Drakensberg, near Bushman's River, 6,000 to 7,000 feet alt., July, *Evans* 51.

Drawn from Evans's specimen.

Mr. Brown says in a note: "This differs from *G. bifurcata*, Benth and Hook, by its much shorter and racemosely decussate flowering branchlets, the lobes of the leaves being frequently forked, the long white silky hairs which laxly clothe the young shoots and leaves, the much shorter pedicels, more acute bracts of the involucre, and the corolla has a longer and more slender tube, and is much more abruptly dilated in the upper part than in *G. bifurcata*."

The genus *Gymnopentzia* contains these two species only, both natives of South Africa, *G. bifurcata* having been found on "damp rocks to the west of Mount Boschberg," and upon this species the genus was founded by Bentham and Hooker, and was figured and described in Icones Plantarum Plate 1,155, and in a note it is said: "This plant is nearly allied to the genus *Pentzia* but the opposite leaves almost exceptional in the Tribe, and the achenes showing at least in the unripe state 12 to 15 prominent ribs instead of 5 angles induced me to establish it as a distinct genus. The forked leaves are also peculiar."

Fig. 1, involucre; 2, an involucral scale; 3, a floret; 4, two stamens; 5, style and stigma; 6, a leaf; *all enlarged.*

PLATE 363.

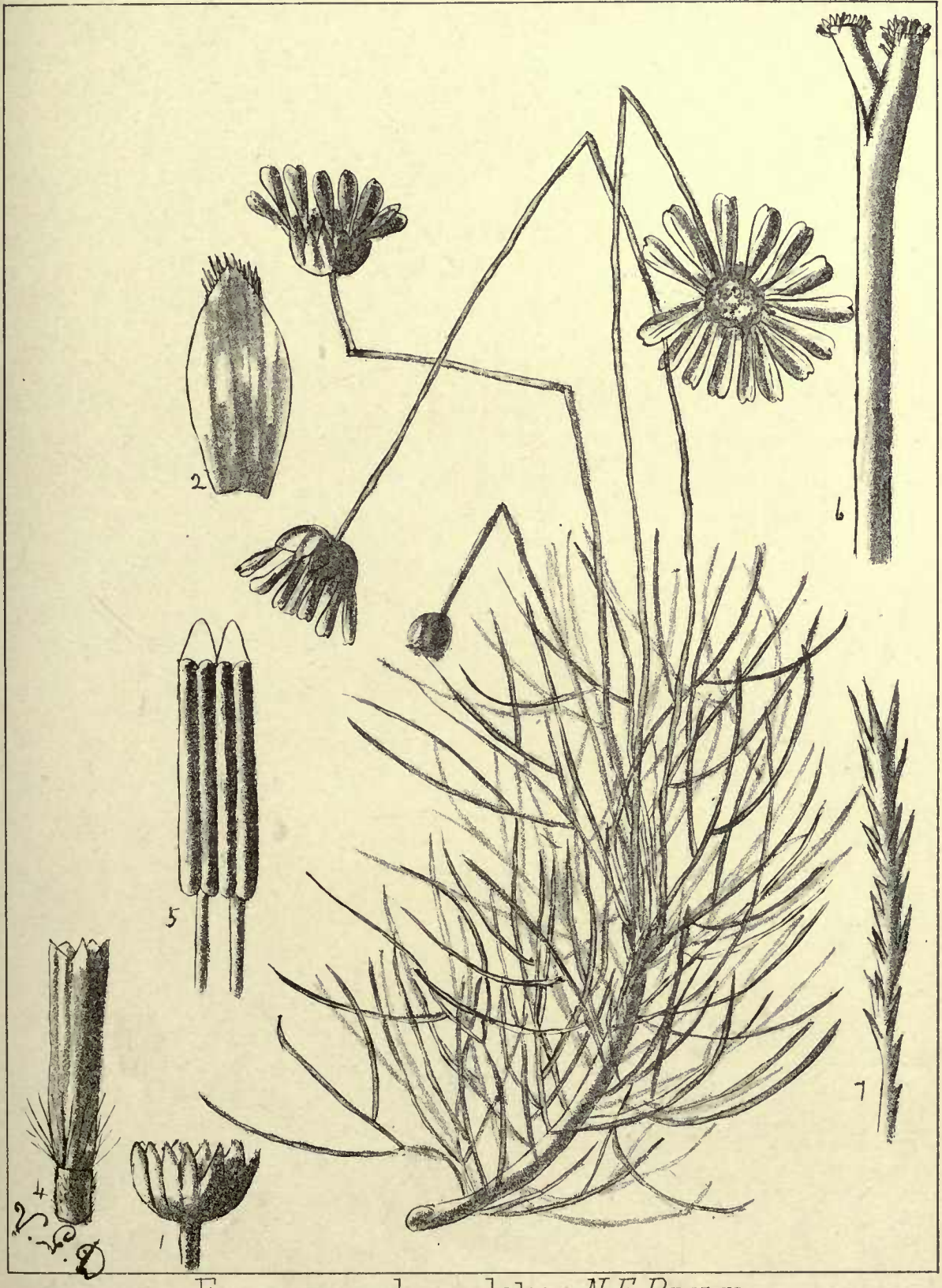
EURYOPS PEDUNCULATUS, N. E. BROWN (Kew Bulletin, 1895, p. 147).
Natural Order, COMPOSITÆ.

An erect plant bearing yellow flowers on long peduncles. Stems 6 inches to 3 feet long, sometimes branched, densely leafy, glabrous or sparingly woolly near the apex. Leaves alternate, exstipulate, linear, subcarnose, mostly trilobed, but sometimes bilobed or simple, glabrous, 1½ to 3 inches long, ⅓ to ½ line wide. Peduncles terminal, 1-headed, naked, glabrous, 6 to 10 inches long. Heads radiate, many flowered, 7 to 10 lines diameter, involucral scales 10 to 12, ovate to ovate-oblong, acute, minutely fringed at apex, connate at base for about one third of their length, 3 to 3½ lines long, 1 to 1¼ line wide. Receptacle toothed; ray florets ligulate, minutely tridentate at apex, 5 lines long, 1 line wide; disk florets tubular, narrowed at base, 5-toothed, 1½ to 2 lines long. Pappus bristles short, deciduous. Styles glabrous, style-arms minutely glandular at apex. Ovary thickly covered with short white hairs. Ripe achenes not seen.

Habitat: NATAL: Oliver's Hook Pass, January, *Wood* No. 3601; Hlatikulu Hill, 6,000 to 7,000 feet alt., January, *Evans*, 397; Van Reenen's Pass, 5,000 to 6,000 feet alt., *Wood*, 8715. Also in Transvaal, *Rehmann*, 6133; and in O.R. Colony, *Cooper*, 2522.

The genus *Euryops* includes about 30 species, one of which is found in Abyssinia and Arabia, the remainder are South African, and of these 4 or 5 are found in Natal, but only one of the Natal species attains the size of a small shrub. The plant here described does not appear to be very common, and has only been met with at high altitudes, where it is sometimes found in rather large patches.

Fig. 1, involucre; 2, an involucral scale; 3, disk floret; 4, two stamens; 5, style and stigmas; 6, pappus bristle; *all enlarged.*



Euryops pedunculatus, *N.E.Brown*.

Sopubia Drcgeana, *Bth.*

PLATE 364.

SOPUBIA DREGEANA, Bth. (Fl. Cap. Vol. IV. p. 386. Sub. S. Simplex).
Natural Order, SCROPHULARIACEAE.

An herbaceous branching plant with pink flowers. Roots thickened. Stems erect or ascending, glabrous, striate, 6 to 24 inches high. Leaves scattered, sessile, exstipulate, linear, entire, glabrous, $\frac{1}{2}$ to $1\frac{1}{4}$ inch long. Inflorescence terminal, racemose, flowers light pink with purple centre. Calyx bell-shaped, 5-toothed, teeth acute and clothed internally with long white, woolly hairs: the whole calyx $2\frac{1}{2}$ lines long. Corolla gamopetalous, salver-shaped, $\frac{3}{4}$ inch diameter, tube cylindrical $1\frac{3}{4}$ line long, limb 5-lobed, lobes ovate, spreading, concave, margins finely and irregularly crenulate. Stamens 4, didynamous, inserted on throat of corolla; filaments curved, especially the front pair, short, deep pink, anthers 2-celled, the cells dissimilar, one large, ovate, perfect, ciliate with woolly hairs, deep purple tinged with yellow; the other divergent, stipitate, linear-oblong, empty, golden yellow, the fertile cells cohering by means of their marginal woolly hairs. Ovary superior, ovate, glabrous, 2-celled, many ovuled; style elongate, finely pilose in lower portion, glabrous upwards, stigma tongue-shaped, obtuse. Capsule ovate, 2 to 3 lines long, seated in the persistent calyx, loculicidally dehiscing, valves entire. Seeds not seen.

Habitat: NATAL: Common in damp ground. Inanda, 1,800 feet, November, *Wood*; same locality, January, *Wood* 313; Noodsberg, 2 to 3,000 feet alt, April, *Wood* (in Government Herbarium, 6449); near Durban, 100 feet alt, August, *Wood*; Malvern, *Miss Dean*, August.

The genus Sopubia according to the Genera Plantarum includes 16 species, 4 of which are South African, the remainder being natives of tropical Africa, India, and Madagascar; of the 4 South African species only 2 so far as known to us have been found in Natal, both of them are rather pretty plants, and would most likely be improved by cultivation. We cannot learn that the natives have any distinctive name for the one here described, nor do they use it in any way. Since the above was written the last Part of Vol. IV. of the Flora Capensis has come to hand, and we find that the name of this plant has been changed to *S. Simplex*, Hochst, but it is too late to alter the name on the plate. We find also that another species (S. fastiglata, Hiern) has been added to the list; this plant was collected near Pigg's Peak, in Swaziland.

Fig. 1, a flower; 2, calyx and bract; 3, portion of calyx opened; 4, corolla opened showing insertion of stamens; 5, a stamen; 6, stigma; 7, capsule; *all enlarged.*

PLATE 365.

DENEKIA CAPENSIS, Thb, (Fl. Cap. Vol. 3, p. 119).
Natural Order, COMPOSITÆ.

Root perennial. Stems several, erect or ascending, 10 to 18 inches long, branching near apex, thinly woolly. Leaves, radical and lower ones linear-oblong, acute at apex, gradually tapering to a deeply channelled petiole, the lamina decurrent as a very narrow wing almost to base of the petiole; margin finely and distantly toothed in the upper portion, midrib broad and thick; the whole leaf subglabrous above, densely white woolly beneath; 4 to 10 inches long, $\frac{1}{2}$ to $1\frac{1}{4}$ wide in the widest part; cauline leaves amplexicaul, lowest linear-oblong, upper ones becoming shorter, broader and subauricled at base, the uppermost scarcely $\frac{1}{2}$ inch long, undulate at margins, the marginal teeth closer and longer than in the lower and radical leaves, like them white woolly beneath, but more pubescent on upper surface. Heads cymosely clustered at ends of the branches; flowers white. Receptacle naked, flat. Involucre campanulate, the scales in 2 rows, those of the outer row oblong, glandular-pubescent, of the inner row more membranous, glabrous on the surface, ciliate especially towards the apex; marginal florets in several rows, female, minutely glandular, their corollas bilabiate, the lobes ovate, equal, pappus none; disk florets hermaphrodite (but sterile) funnel-shaped 5-fid, teeth acute; glandular; pappus of a single scale which is palmato-fimbriate at apex. Styles of disk-florets bifid, the branches flattened, acute; of ray florets more slender, the branches terete. Achenes pubescent.

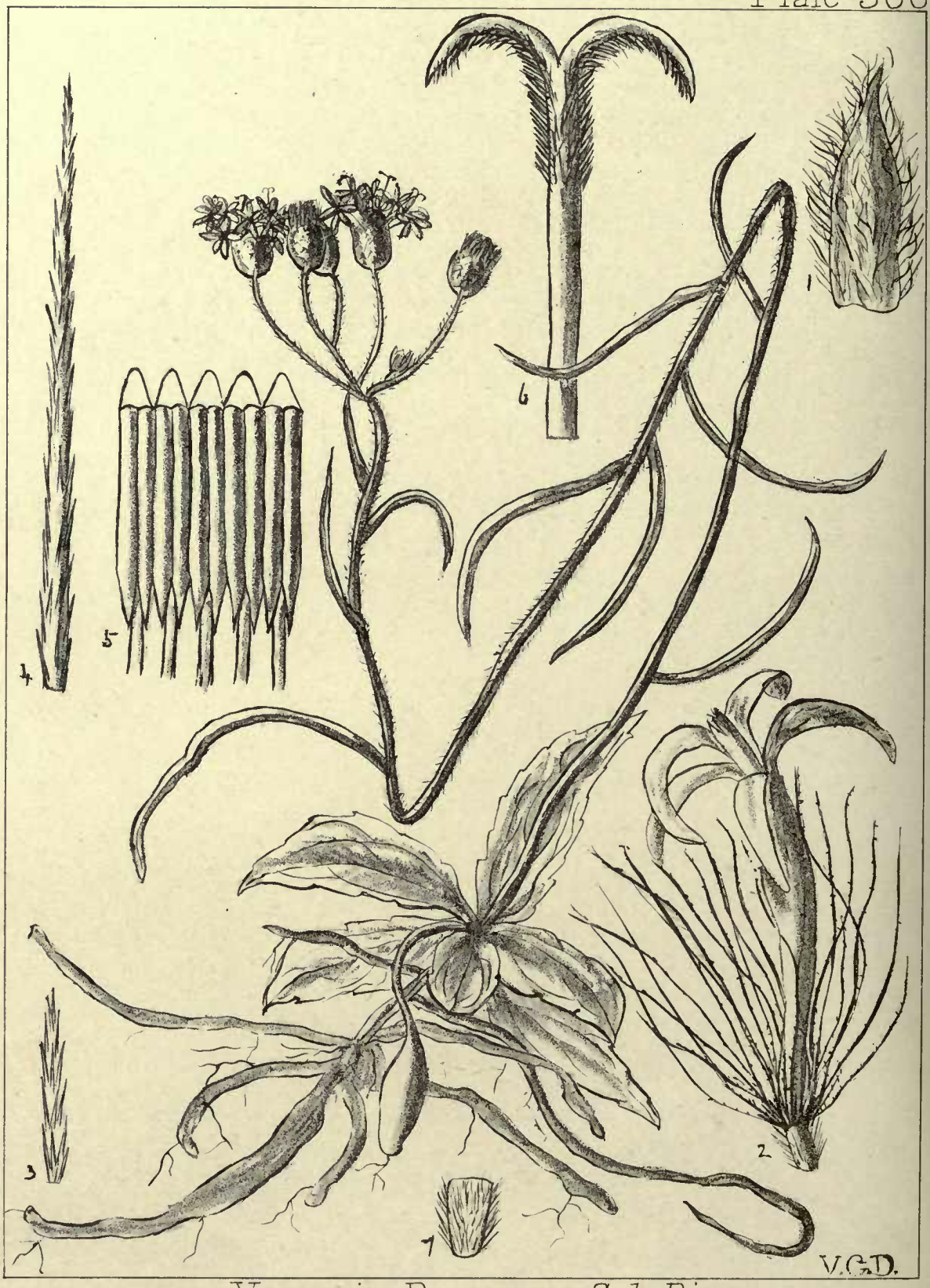
Habitat: NATAL: *Drege*, *Bowker*, *Sanderson*, *Gerrard* and *McKen*, 268, *Zeyher*, 901, 902. Inanda 1800 feet alt, in moist places, *Wood*, 664; Clairmont, 20 feet alt, in similar soil, *Wood*, 1253.

Drawn and described from specimens gathered near Durban, July, 1904.

This genus contains 2 species only, both of which are confined to South Africa; they are found in damp soil, and the above described species is common in such places all over the Colony; it is an insignificant plant, and is not applied to any useful purpose. The pappus of the disk florets consisting of a single multifid scale to each is worthy of notice. In the Flora Capensis it is stated that the pappus consists of this scale, "and of a few small simple scales," but these in the specimens examined we are unable to find. The other species, *D. glabrata*, DC., is similar to the one here described, except that it is glabrous, not pubescent, and is most likely a mere variety.

Fig. 1, outer involucral scale; 2, inner involucral scale; 3, ray floret; 4, disk floret; 5, style and stigma of ray floret; 6, same of disk floret; 7, three stamens; *all enlarged*.

Denekia capensis, *Thunb.*



Vernonia Dregeana, *Sch. Bip.*

PLATE 366.

VERNONIA DREGEANA, Sch. Bip. (Fl. Cap. Vol. III. p. 52).
Natural Order, COMPOSITÆ.

An herbaceous plant with small purple flower heads. Roots fibrous, some swollen or tuberous. Stem erect, angled or deeply furrowed, silky with simple or forked hairs especially in upper portion; 1 to 2 feet long. Radical leaves several, rosulate, obovate to oblanceolate or oblong, with a few minute scattered silky hairs especially on the midrib beneath, minutely gland-dotted on the lower side; $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, $\frac{1}{2}$ to 1 inch wide, quite entire; petioles very short, thickened and purplish at base; cauline leaves few, linear, sessile, acute, very strongly recurved, finely and sparingly silky especially so on the midrib beneath, gland-dotted, glabrous and green above, except for a few fine hairs on the midrib; 1 to 3 inches long, 1 to 2 lines wide. Inflorescence corymbose, few headed, pedicels $\frac{3}{4}$ to $1\frac{1}{2}$ inch long. Heads 4 to 6 lines in diameter when expanded. Involucral scales in 2 to 3 rows, linear-lanceolate, acute, purplish at tips, densely tomentose. Florets homogamous. Receptacle honeycombed, margins of cells fimbrilliferous. Corollas tubular, 5-lobed, lobes linear-oblong, acute, with a few minute scattered hairs. Pappus bristles in 2 series, outer ones short, inner long and lacerate-serrate, white. Stamens 5; anthers linear-oblong, sagittate. Style elongate, the arms long, bristly on outer surface. Achenes silky.

Habitat: NATAL: *Williamson, Sanderson, Gerrard* and *McKen*, 316; near Verulam, 300 feet alt, December, *Wood*, 1193; near Durban, 50 feet alt, October, *Wood*.

This plant we have seldom seen more than two feet high, the leaves are mostly in a rosette at base of the flowering stem with a few linear ones upwards, the flower heads are small and purple; it is apparently confined to the coast districts; we have not met with it at more than 500 feet above sea level, and it is usually found in moist places.

Fig. 1, involucral scale; 2, floret; 3, outer pappus scale; 4, inner pappus scale; 5, stamens; 6, style and stigmas; 7, achene; *all enlarged.*

PLATE 367.

CERATOTHECA TRILOBA, E. Mey (Bot. Mag. t. 6974).
Natural Order, PEDALINEAE.

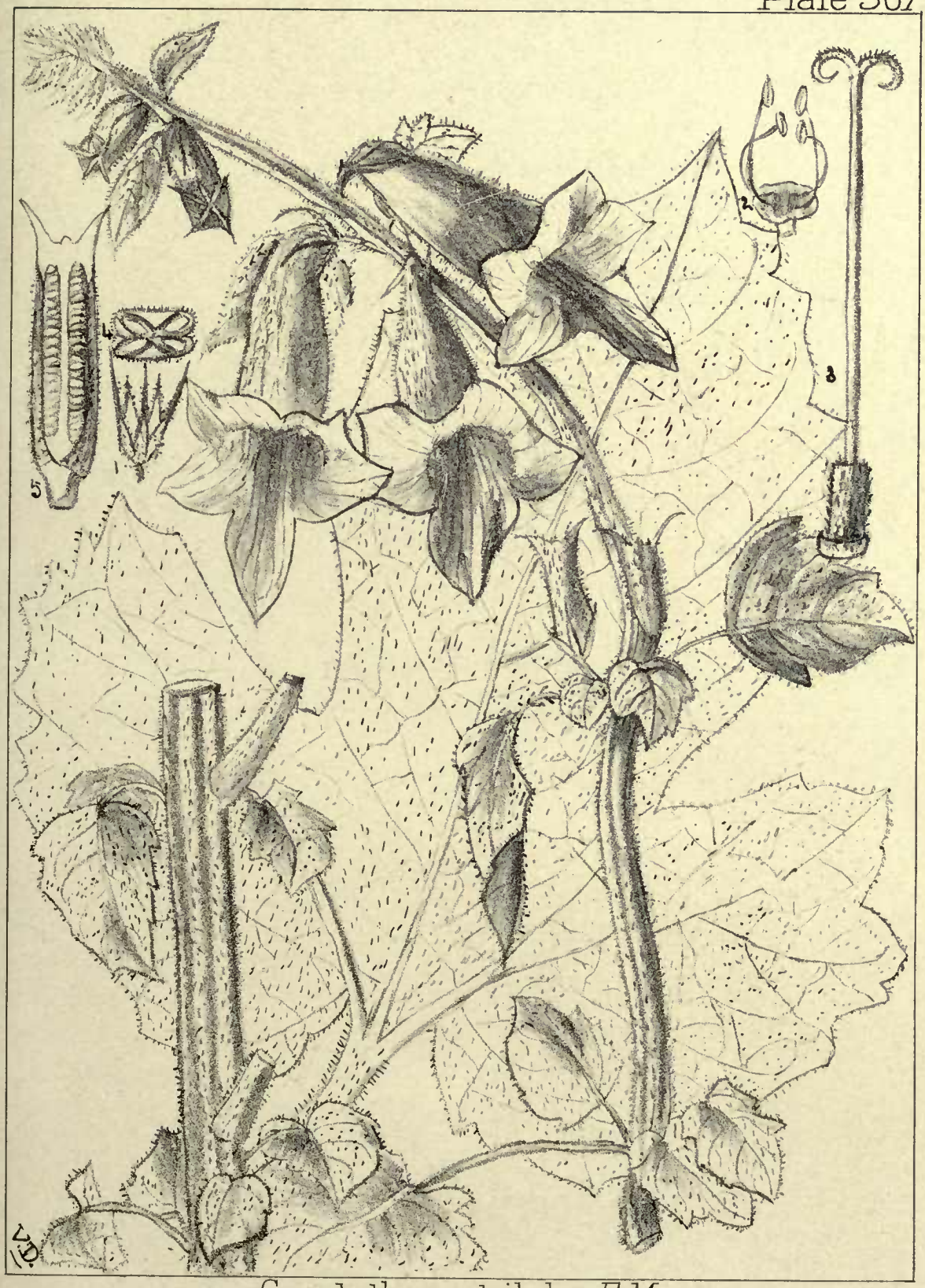
A tall pubescent herb with the habit of a foxglove. Stem 5 feet high, erect, stout, herbaceous and rather succulent, with short branches from the base, simple higher up, obtusely 4-angled, the angles rounded, the faces deeply grooved. Leaves polymorphous, lower long-petioled, from broadly ovate-cordate or almost rounded to broadly triangular and 3-lobed, with the lateral lobes spreading, margins coarsely crenate, surfaces more or less pubescent; broadest leaves 8 inches across the lobes; petiole 5 to 6 inches, stout, hairy; floral leaves narrowly ovate, much shorter than the flowers, but longer than the calyx. Flowers in opposite pairs, very shortly pedicelled, pedicels erect, with a minute imperfect flower at the base of each, consisting of a truncate 5-lobuled calyx, 5 rounded lobules representing the corolla and a minute 2-lobed stylode. Calyx erect, obscurely 2-lipped, divided to the base into 5 narrowly lanceolate erect deciduous hairy sepals, half an inch long. Corolla 3 inches long, pilose; tube with a gibbous decurved base, trumpet shaped at the tip, gradually expanding into the very oblique 5-lobed, sub-two-lipped limb, of which the 4 upper lobes are broadly shortly ovate and recurved, the fifth or lower is pendulous, oblong obtuse. Stamens inserted on the tube just above the gibbous base, filaments glabrous; anthers linear-oblong, slightly hispid at the base. Disk lobed. Ovary cylindric, pubescent, top rounded; style slender with 2 short subulate spreading stigmatic arms.

Habitat: NATAL: Inanda, 1,800 feet alt, *Wood*, 140. Common in the coast and midland districts; a variety with pure white flowers was also found at Inanda, but is apparently very rare.

The above description is copied verbatim from the Botanical Magazine, where the plant was described by Sir J. D. Hooker; he also says as follows:—

"A native of Natal, closely allied to the common cultivated Indian and Oriental *Sesamum indicum*, Linn, but a very much handsomer plant. Indeed *Ceratotheca* differs from the older genus in no important characters but the 2-horned capsule, and might well be regarded as a section of it. *Ceratotheca* itself has been subdivided into two genera, but, as has been pointed out in the 'Genera Plantarum' on imaginary grounds, for *Sporledera*, which was invented for *C. triloba*, does not even form a section of *Ceratotheca*. *C. triloba* has been collected by many travellers, and over a wide tract of country, including Natal, the Transvaal, Bechuanaland, and Matabele country. The Kew Garden specimens which were raised from seed sent by Mr. Wood from the Natal Botanical Gardens are very much taller and more luxuriant than the native ones; they were raised from seed that arrived in December, 1886, and flowered in September of the following year.

Fig. 1, calyx; 2, base of corolla tube showing insertion of stamens; 3, ovary, disk, style and stigmas; 4, cross section of ovary; 5, longitudinal section of same; *all enlarged*



Ceratotheca triloba, *E.M.*

Pelargonium aconitiphyllum, *E.* & *Z.*

PLATE 368.

PELARGONIUM ACONITIPHYLLUM, E. & Z. (Fl. Cap. Vol. 1, p. 276).
Natural Order. GERANIACEÆ.

A perennial plant bearing umbels of flowers which are pale yellow, creamy white or pale pink. Rootstock woody. Stem very short. Leaves polymorphous, radical, lower ones broadly ovate in outline, broadly crenate, the lobes again toothed or mucronate, 3 to 5-veined at base, the veins prominent beneath, shortly pilose on both surfaces, ciliate, 2 to 4 inches long and wide, the upper leaves pinnati-partite, or bipinnati-partite, the lobes linear or linear-lanceolate, 1 to 2 inches or more long, mucronate, a prominent vein in each lobe; pilose on the veins beneath, glabrous above, not ciliate; petioles 2 to 5 inches or more long, pilose with long white hairs. Stipules subulate or lanceolate, pilose, ½ to 1 inch long. Inflorescence umbellate; peduncles 12 to 18 inches long, densely pilose, erect; umbels 12 to 40 flowered, bracts at base of pedicels numerous, ovate or oblong-acuminate, pilose; pedicels 1 to 2 inches long, pubescent. Calyx 5-parted, lobes linear, acute, reflexed, pubescent, the uppermost one produced into a tube which is decurrent on the pedicel and adnate to it. Corolla of 5 obovate, entire petals, which are twice as long as sepals; glabrous. Filaments 10, unequal, monodelphous, 7 longer than the others, but unequal, fertile, the 3 short ones barren; anthers 2-celled, erect. Fruit of 5 one seeded carpels which separate at maturity from the enlarged torus.

Habitat: NATAL: Coast lands. *Sutherland*, *Sanderson*, *Gueinzius;* Inanda, 1900 feet alt, *Wood*, 1172; Mooi River, *Wood*; Camperdown, 2500 feet alt, Jan. *Wood*, 1968.

This plant is found from the coast to the uplands of the Colony, and is well worth cultivation. In the Flora Capensis the flowers are said to be "dull yellow without large spot," we find that they vary in colour from pale yellow to light pink, sometimes yellow with pink lines. The leaves are very variable in size and shape, the broad leaved and almost entire forms are very similar to those of the closely allied *P. flabellifolium*, which, however, differs by its very prominent venation, and usually larger size. The rootstocks of both of these plants have been used medicinally in diarrhoea, but with what success we have no reliable information.

Fig. 1, calyx; 2, staminal tube opened; 3, pistil; *all enlarged.*

PLATE 369.

VANGUERIA INFAUSTA, Burch (Fl. Cap. Vol. III. p. 13).
Natural Order, RUBIACEAE.

A shrub 3 to 10 feet high, bearing axillary panicles of green flowers, and yielding an eatable fruit. Stems one or several, usually short, branches terete, compressed at nodes, densely rusty-tomentose. Leaves opposite, petiolate, stipulate, deciduous, quite entire, ovate or ovate-oblong, veins prominent beneath, less so above; upper surface finely pubescent with short erect hairs, dark green; under surface more densely pubescent and lighter in colour; 3 to 6 inches long, 2 to 4 inches wide; petioles 3 to 9 lines long, pubescent like the leaves; stipules cuspidate from a broad base, clothed internally with long whitish bristles. Inflorescence axillary, paniculate, the panicles 2-3-chotomous, much shorter than the leaves, bracteate, bracts small deciduous. Calyx gamosepalous, 5-lobed, tube turbinate, 1 line long, densely pubescent externally. Corolla gamopetalous, tube cylindrical, 2 lines long, lobes oblong, minutely hooded at apex; 1½ line long; throat densely clothed inside with long white hairs in two rows, those of the upper row erect, of the lower reversed, the whole corolla pubescent externally; bracts small, deciduous. Stamens 5, on throat of corolla; anthers linear-oblong, 2-celled, dark brown, filaments very short. Ovary inferior, 5-celled, cells 1 ovuled; style subulate, stigma shortly cylindric, large, intruse at base, obtuse at apex. Fruit globose, 1 inch in diameter, edible.

Habitat: NATAL: *Krauss*, 219; *Sanderson*, 306; *Williamson*, *Drege*, *Gueinzius*, 56; Inanda, *Wood*, 670; Berea, Nov. *Wood*, 9568, var. virescens, near Durban, *Wood*, 9569.

In the Flora Capensis a variety of this plant is described as *var. virescens*, the only difference given being that in the type the leaves are said to be "densely covered with a yellowish tomentum," while in the variety they are said to be "green and glabrous or nearly so;" specimens of both varieties gathered near Durban are now before me, and except in the absence of hairs on all parts except stipules and throat of corolla I see no material difference between them. In the Flora Capensis it is also said that the variety *virescens* is nearly allied to *V. edulis*, Vahl. a native of tropical Africa and Madagascar. *V. infausta* is the host plant of a fungus, *Hemileia Woodii*, K. & C., which is nearly related to the destructive *Hemileia vastatrix*, a pest which has been so fatal to the coffee crops in Ceylon and elsewhere; another fungus *Æcidium vanguerieæ*, Cke is also found in abundance on this plant, attacking not only the leaves, but also the flowers and fruit, the distinct Aecidium cups may be easily distinguished, while the Hemileia forms distinct patches of orange coloured dust on the lower surface of the leaves. It has been suggested that this plant might be cultivated for the purpose of improving the fruit, but whether it is advisable to cultivate a plant which is so badly infested with these pests is somewhat doubtful, I should rather suggest that the plants should be exterminated as far as possible.

Fig. 1, calyx; 2, same seen from above; 3, flower; 4, corolla opened showing stamens; 5, corolla lobe; 6, style and stigma; 7, fruit; 8, cross section of ovary; *all enlarged.*

Vangueria infausta, *Burchell.*

Striga Thunbergii, *Benth.*

PLATE 370.

STRIGA THUNBERGII, Benth. (Fl. Cap. Vol. IV. p. 380.)
Natural Order, SCROPHULARIACEÆ.

An erect herbaceous plant with flowers varying from pale lilac to almost white on different plants, the whole plant light green in colour. Stems simple or often branched, reaching to 1 foot or 18 inches in height, deeply furrowed, floriferous in upper portion of stems and branches, which are straight, ascending, and leafy to the apex. Leaves linear or linear-lanceolate, acute or subacute, sessile and slightly decurrent, roughly hispid with whitish hairs, ciliate, quite entire; lower and central ones opposite, upper one alternate; floral leaves small, lanceolate, longer than the calyx, hispid-ciliate. Inflorescence spicate, the spikes elongating in flower; bracteoles linear, acute, hispid-ciliate, shorter than the calyx, rigid. Calyx gamosepalous, strongly 5-ribbed, and 5-lobed, $\frac{1}{4}$ inch long, membranaceous between the ribs, roughly hispid on the ribs and margins of the lobes, lobes equalling the tubes. Corolla gamopetalous, tube about $\frac{1}{2}$ inch long, strongly curved outwards above the middle, narrow and subcylindrical below, gradually widening above the bend, glandularly pubescent outside, glabrous within; limb bilabiate, spreading, upper lobe widest, emarginate, lower trifid, teeth obtuse. Stamens 4, didynamous, included, inserted near middle of the corolla tube; anthers 1-celled, obtuse at base and apex, glabrous. Ovary 2-celled, ovules numerous; style short, included, thickened at apex. Capsule obovoid, glabrous, included in the persistent calyx, loculicidal, valves coriaceous, entire. Seeds numerous, testa black, netted.

Habitat: NATAL: Table Mountain, *Krauss*; Attercliffe, *Sanderson*, 428; Inanda, *Wood*, 113; Charlestown and Colenso, *Krauss*; near Newcastle, *Wilms*, 2211; Howick, *Mrs. Hutton*, 181; *Gerrard*, 43; *Gueinzius*, 48; Ungoya, Zululand, *Wylie* (*Wood* 5739); Isandhlwana, *Pattershall Thomas*.

The genus Striga contains about 30 species, inhabiting the warmer parts of Africa, Asia, and Australia, all of them are herbs and most of them parasitical to a greater or less extent. In Natal we have 5 well known species, and another one collected by Mr. M. S. Evans on the Drakensberg is probably identical with *S. Junodii*, collected by Junod near Delagoa Bay. The Natal species are probably all parasitic on the roots of grasses, or on plants belonging to the Order Gramineae, the most destructive one to the Maize crop is *S. lutea*, formerly known as *S. coccinea*, *Bth.* It is known to the natives as i-Sona, and to Colonists as "Witchweed;" the parasitic nature of this plant has been clearly shown by the Natal Government Entomologist, Mr. Claude Fuller, in the Natal Agricultural Journal, Vol. III., p. 65. Another plant of this genus, *S. Forbesii*, is quite as destructive to the Maize crops as *A. lutea*, but is not so common. *S. Thunbergii* I have never met with in corn fields and believe it to be parasitical on the roots of grasses, while *S. lutea*, and *S. Forbesii* are seldom met with outside Maize fields, or in their close vicinity.

Fig. 1, bract; 2, bracteole; 3, flower; 4, calyx; 5, corolla opened, showing stamens; 6, stamen; 7, pistil; 8, capsule; 9, cross section of ovary; *all enlarged.*

PLATE 371.

GERBERA AURANTIACA, Sch. Bip. (Fl. Cap. Vol. III. p 523.
Natural Order, COMPOSITÆ.

An herbaceous, stemless perennial, bearing flower heads which vary from scarlet to deep crimson. Rootstock woody. Leaves petiolate, lanceolate to oblong-lanceolate, acute at apex, gradually tapering at base, and decurrent as a narrow wing on the petiole almost to its base, margins entire or obscurely denticulate, ciliate, pilose on both surfaces, becoming glabrous in age, midvein stout, secondary ones indistinct, the whole leaf including the petiole, 6 to 10 inches long, 1 to 2 inches wide. Heads heterogamous, solitary, 2 to 3 inches in diameter when expanded, on densely tomentose peduncles which are longer than the leaves. Involucral scales in several rows, free to base, the outer ones short, inner longer, innermost longest; all subulate, herbaceous and densely tomentose. Ray florets in two rows, those of the outer row bilabiate, outer lip $1\frac{1}{4}$ inch long, bi-or tridentate at apex, inner minute, lacerate nearly to base, scarlet or crimson on upper suface, dull orange beneath, veiny; those of the inner row, shortly bilabiate, outer lip 3-fid at apex, inner 2 to 3 cleft; disk florets subsimilar. Achenes of perfect florets pubescent, of the barren disk florets glabrous. Pappus in two or more rows, copious, of rough bristles, purple in upper portion, yellow below. Stamens included; anthers sagittate or tailed at base. Style branches short, obtuse. Ripe achenes not seen.

Habitat: NATAL: Grassy hills near Maritzburg, 2,000 to 3,000 feet alt., *Krauss; Sutherland: Sanderson*, 154; Liddesdale, near Howick, 4-5,000 feet alt. *Wood*, 4,254; near Greytown, April *Wood* (Government Herbarium 4,986); Zululand, Qudeni, 6,000 feet alt., May, *Davis*, 85 (Government Herbarium, 8,796) near Maritzburg, *Rutter*, November (*Wood*, 9635).

A very handsome species, the flower heads are nearly or quite as large as those of *G. Jamesoni*, the well known "Barberton Daisy," and the plant is well worth cultivation. The specimen from which the drawing was made was brought from near Maritzburg by Mr. Rutter, and several plants of it brought at the same time are now growing in the Gardens and promising well so far. One other species of this genus has been figured in this work, viz', *G. Kraussii*, Plate 56, Vol. I.

Fig. 1, involucre; 2, scale of same; 3, outer ray floret, lower portion; 4, disk floret; 5, stamens; 6, portion of style with stigmas; 7, achene; *all enlarged*.

Gerbera auranhiaca, *Sch. Bip.*

Salacia alternifolia, *Hochst.*

PLATE 372.

SALACIA ALTERNIFOLIA, Hochst. Fl. Cap. Vol. I. p. 230 (sub. S. Kraussii, Hochst). Natural Order, CELASTRINEÆ.

A slender glabrous undershrub, simple or branched, with yellow-green flowers. Stems and branches terete, bark rough, dark coloured. Leaves alternate, subsessile or very shortly petiolate, oblong or broadly lanceolate, obtuse at base and apex, margins quite entire or very indistinctly crenate; coriaceous, indistinctly penninerved, dark green; 1 to $2\frac{1}{2}$ inches long, 1 to $1\frac{1}{2}$ inch wide; stipules very minute and soon deciduous; petiole $\frac{1}{2}$ to $1\frac{1}{2}$ line long. Inflorescence axillary, the pedicels clustered in the axils, $\frac{1}{4}$ to $\frac{1}{2}$ inch long; buds globose. Calyx much shorter than the petals, 4-lobed or parted, the lobes unequal, orbicular in outline, concave, puberulous, green; margins brown, membranous. Petals 4 to 7, imbricate in æstivation, oblong, spreading, to 3 to 4 lines diameter, green, pubescent externally. Stamens 3, hypogynous, inserted inside a thick fleshy annular, perigynous disk; filaments much flattened, tapering to apex, at length strongly recurved; anthers 2-celled, extrorse, dehiscing in bud. Ovary half immersed in the disk, 3-celled, ovules 2 or more in each cell; style very short; stigma 3-lobed.

Habitat: NATAL: Margins of woods, *Krauss*; *Pappe*; *Gueinzius*; Inanda, 1,800 feet alt., *Wood*, 567; near Durban, 100 feet alt., *Wood* (Goverment Herbarium, 3,565).

In the Flora Capensis the genus Salacia appears under the Order Hippocrateaceae, but that Order is now united with Celastrineae; the genus contains according to the Genera Plantarum 60 to 70 species, trees, shrubs and climbers, and of these one only is found in South Africa, and 15 or more in tropical Africa. *S. alternifolia* is described in the Flora Capensis as *S. Kraussi*, Hochst, the other species there described, *S. Zeyheri*, Planch is now known as *Rhamnus Zeyheri*, Spreng.

Fig. 1, a flower; 2, calyx; 3, a petal; 4, disk, stamens and pistil; 5, a stamen; 6, pistil; *all enlarged.*

PLATE 373.

GREYIA SUTHERLANDI, Hook & Harv (Fl. Cap. Vol. II. p. 309).
Natural Order, SAPINDACEÆ.

A moderately sized tree bearing short densely flowered racemes of crimson flowers. Bark rough, grey, often split longitudinally. Branches and twigs leafy near the end, bare below. Leaves alternate, simple, petiolate, exstipulate, orbicular in general outline, cordate at base, margins crenate, the lobes again finely crenate or toothed, glabrous, minutely glandular above, resinous beneath; 2 to 4 inches in diameter; petiole 2 to 3 inches long, widened and semiamplexicaul at base. Inflorescence racemose at extremities of branches and branchlets. Racemes 2 to 4 inches long, densely many flowered. Calyx gamosepalous, 5-parted nearly to base, 2 to 3 lines long, persistent, lobes obtuse, imbricate in æstivation, pedicels $\frac{1}{4}$ inch long, bracteate at base. Petals 5, oblong, sessile, deciduous, imbricate, thick in substance, glossy, bright crimson, ciliolate; 7 to 9 lines long. Stamens in two rows, subhypogynous, those of the outer row 10, abortive, their filaments very short, inserted on a fleshy cup, without fertile anthers, but each tipped with a peltate gland; those of the inner row 10, separate, fertile, filaments filiform, 1 inch long; anthers 2-celled. Ovary superior, deeply 5-furrowed, "formed of 5 induplicate-valvate carpels," each 1-celled, tapering gradually to a subulate style; stigma minutely 5-toothed. Capsule membranous, 5-lobed, almost separating into 5 follicles. Seeds numerous, minute.

Habitat: NATAL: Rocky mountainous situations, 2,000 to 6,000 feet alt. *Sutherland;* Inanda, 2,000 feet alt. August, *Wood*, 987; Liddesdale, near Howick, 4-5,000 feet alt., *Wood*; Van Reenen, 5-6,000 feet alt., December, *Wood.*

The genus Greyia was first established on the above described species, and named in honour of Sir George Grey, and of Dr. Sutherland, who was the first to send Home specimens of the tree; since that time two other species have been established, viz., *G. Flanagani* from Cape Colony and Transvaal, and *G. Badikoferi* from Transvaal. *G. Sutherlandi* when first described by Professor Harvey was provisionally placed in the Order Saxifragaceæ, but has since been removed to Sapindaceæ; it is the first plant figured and described in Professor Harvey's Thesaurus Capensis, and he says "the foliage is not unlike that of a Ribes or of the scarlet Pelargoniums," and some years ago the leaves were sent to me for identification as those of a large Geranium! The tree in the upper districts reaches to 20 feet or more in height, and when in flower is a very conspicuous object, but at lower altitudes it is usually but a large shrub, but bears its handsome flowers in profusion. The wood is said by Fourcade to be light, soft, very weak, pale pink tinged with brown, and to be used by the natives for carving, but is of little value. Kafir name in-Dalu.

Fig. 1, a flower; 2, staminal cup, showing perfect and imperfect stamens; 3, portion of stamen; 4, ovary; 5, portion of style with stigma; 6, capsule; except fig. 1, *all enlarged.*

Greyia Sutherlandi, *Hook & Harv.*

Loranthus natalitius, *Meisn.*

PLATE 374.

LORANTHUS NATALITIUS, Meisn. (Fl. Cap. Vol. II., p. 376).
Natural Order, LORANTHACEÆ.

A much branched parasitical plant bearing orange-yellow and white flowers. Bark dark coloured, quite glabrous. Leaves scattered or occasionally sub-opposite, very shortly petiolate, oblong-lanceolate to obovate, obtuse and rounded at apex, tapering to base, entire, glabrous, subglaucous, $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, $\frac{1}{2}$ to 1 inch wide, exstipulate. Pedicels 1-flowered, in clusters of 3 to 5, at ends of the short branchlets, up to 1 inch long; bracts obliquely cup-shaped. Calyx obconic, truncate, subentire, 1 to $1\frac{1}{2}$ line long, $1\frac{1}{4}$ line wide. Corolla gamopetalous, tubular tube subequal in diameter for the greater part of its length, but a little narrowed at base, white; $2\frac{1}{2}$ to $2\frac{3}{4}$ inches long, 2 lines wide, white or pale yellow, internally 5-lined, the line rather prominent, red, and reaching for a part or the whole of the length of the tube; limb 5-lobed, lobes linear, 6 to 9 lines long, $\frac{3}{4}$ to 1 line wide, acute at apex, orange-yellow. Stamens 5, on corolla at base of the lobes, filaments shorter than corolla lobes, scarlet in lower portion, orange-yellow upwards; anthers linear, 2-celled, basified, cohering round the stigma in bud. Style filiform, a little thickened in upper portion; stigma subglobose in outline, minutely 2-fid. Ovary inferior, 1-celled. Seeds not seen.

Habitat: NATAL: Near Durban, *Krauss; Gueinzius; Sanderson;* near Itafamasi, 1-2,000 feet alt., *Wood*, 748; Umlaas, December, *Wood*, 9,631.

This is the largest flowered species of Loranthus that we have in Natal, and is very conspicuous when in flower. Two other species have been figured and described in this work, viz., *L. Kraussianus*, Meisn in Vol. I., p. 76, and *L. quinquenervius* in Vol. III., p. 295, in the note to the first named species reference was made by my then colleague, Mr. M. S. Evans, to the manner in which these plants are fertilised by "Sun-Birds" (*Cinneris olivaceous*), and also by the "Tinker-Bird" (*Barbetula pusilla*). The berries of all the species are used for making bird-lime. *L. natalitius* is also figured and described in "Thesaurus Capensis" Plate XXX., and Professor Harvey says, "Our figure, taken from a dried specimen, represents the flowers as pendulous, and so they are described by Meisner; but Mr. Sanderson assures me that "when growing they stand erect, and as they are of a waxy white, and tipped with yellow they resemble lighted candles, by which name they are known to the children in Natal." It is quite correct that when growing the flowers are erect, not pendulous.

Fig. 1, calyx and bract; 2, corolla opened; 3, style and stigma; *all enlarged.*

PLATE 375.

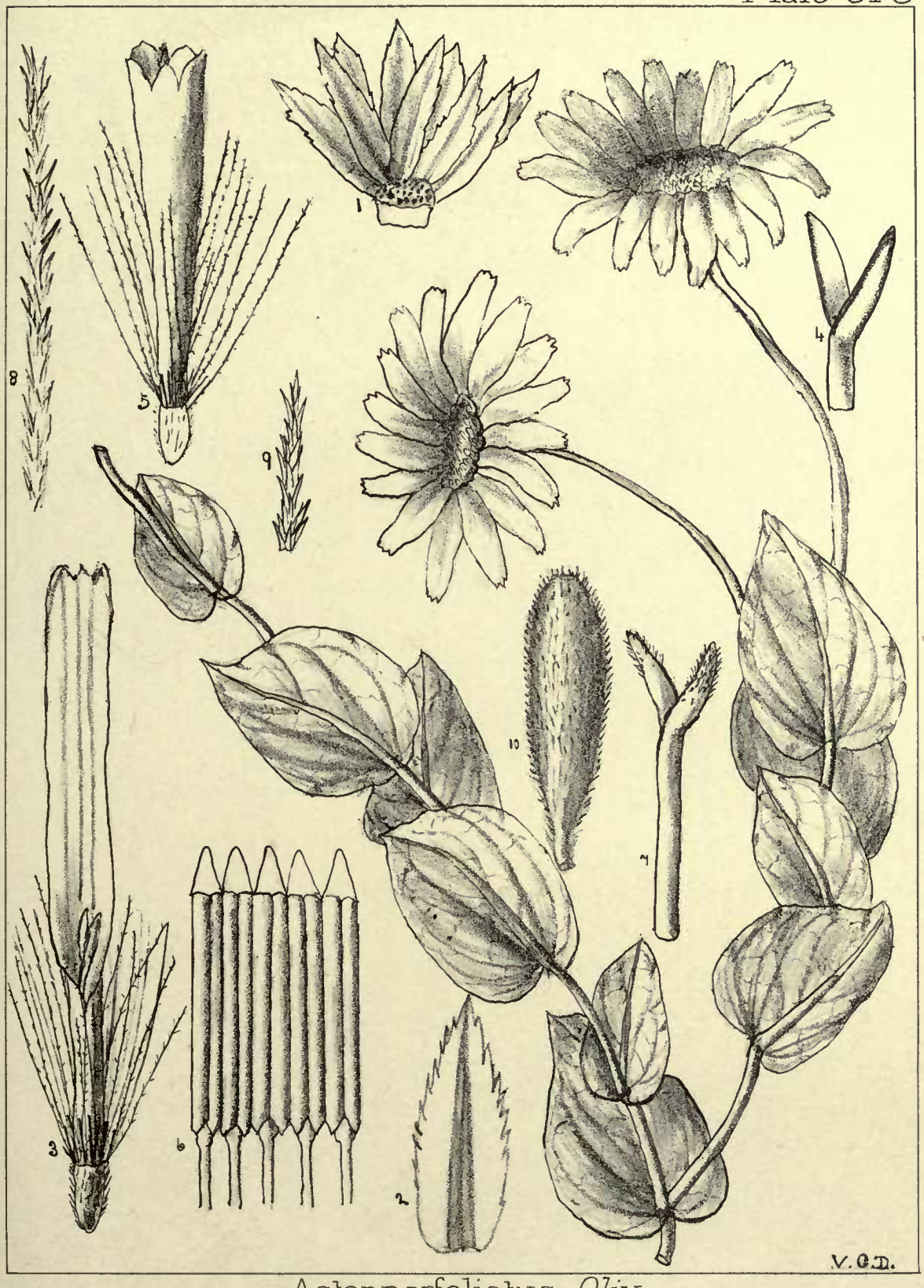
ASTER PERFOLIATUS, Oliv. (Icones Plantarum, Vol. XVIII. plate 1717).

A glabrous herbaceous plant, bearing solitary heads of blue flowers on long peduncles. Stems simple or branched, ascending or erect, striate, 1 to 2 feet high. Leaves alternate, amplexicaul, broadly ovate to sub-rotund, quite entire, cordate amplexicaul, obtuse and mucronate at apex, strongly net veined, with very minute immersed glands in the araeole, margins thickened; 1 to 2 inches long, 1 to 1¼ inch wide. Peduncles long and naked, sometimes with a single lanceolate or ovate depauperated leaf above the centre. Heads solitary, radiate, 1¼ to 1½ inch diameter when fully expanded. Involucral scales in two to four series, outer ones ovate-lanceolate, acute, margin broadly scarious, 3-veined, erose; inner oblanceolate, acute. Pappus bristles copious, barbellate, in two rows, inner row shorter, outer equalling the disk florets. Corolla of ray florets linear-oblong, toothed at apex, disk florets tubular 5-toothed. Anthers sagittate at base. Style arms flattened, acute, minutely bristly, those of the disk florets more so than those of the ray florets. Achenes pilose with minute silvery hairs.

Habitat: NATAL: Slopes of Drakensberg, *Cooper*, 3,510; Tugela Falls, January, 6-7,000 feet alt., *Wood*, 3,605; Van Reenen's Pass, 5-6,000 feet alt., December, *Wood*, 9,646,

This plant has only been found in the higher districts of the Colony, and is nowhere very plentiful. At Van Reenen and also near Tugela Falls it was found growing in the crevices of often almost perpendicular rocks. The flowers are dark blue, but differ a little in depth of colour. It was also collected in "Faku's Territory" by the late Dr. Sutherland, and was figured and described in Hooker's "Icones Plantarum" in the year 1887.

Fig 1, section of involucre; 2, outer involucral scales; 3, ray floret; 4, style arms of same; 5, disk floret; 6, stamens; 7, style arms of disk floret; 8 pappus bristle; 9, same, inner series; 10, achene; *all enlarged.*



Aster perfoliatus, *Oliv.*

NATAL PLANTS.

Vol. 4.—PART IV.

—BY—

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DIRECTOR OF NATAL BOTANIC GARDENS, DURBAN,

—AND OF—

NATAL GOVERNMENT HERBARIUM.

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1906.

Gardenia globosa, *Hochst.*

PLATE 376.

GARDENIA GLOBOSA, HOCHST. (Fl. Cap. Vol. III., p. 5.)
Natural Order, RUBIACEÆ.

A shrub or small tree bearing large white bell-shaped flowers. Twigs terete, bark dark-coloured Leaves opposite, stipulate, petiolate, lanceolate to almost ob-lanceolate, quite glabrous, 2 to 6 inches long, 1 to 1½ inch wide, quite entire, obtuse or acute at apex, tapering gradually to the petiole, midrib prominent beneath, reddish, secondary veins conspicuous but not prominent, 6 to 9 on each side; petiole 3 to 5 lines long. Stipules cuspidate from a broad thickened base, about one-third the length of the petiole, minutely pubescent, soon deciduous. Flowers terminal on twigs and branches, or axillary, solitary or aggregated; pedicels 1 to 2 lines long, minutely pubescent. Calyx tubular, limb 5-lobed, lobes acute, erect, tube slightly swollen, the whole calyx including ovary, 3 to 4 lines long, minutely pubescent externally, silky internally and with a few scattered yellow, lanceolate glands. Corolla campanulate, the tube suddenly becoming much swollen from mouth of calyx tube, limb 4-5-lobed, lobes ovate, acute, half as long as the tube, the whole corolla 1½ inch long, minutely pubescent externally, the tube densely tomentose internally. Stamens 5, on tube of corolla, alternate with its lobes, subsessile; anthers linear, 2-celled, attached by centre, included. Style long; stigma sub-clavate, reaching to throat of corolla, but not exserted, 2-fid at apex. Ovary inferior, 1-celled, many ovuled. Berry fleshy, crowned by the calyx lobes, many seeded, seeds minute, immersed in the fleshy parietal placentas.

Habitat: NATAL: Coast and Midlands, to 2000 feet alt; rare in uplands. *Krauss*, 467; *Gueinzius*, 130, 546; *Gerrard & McKen*, 714; *Sanderson*, 700; Zululand, 6000 feet alt, *Davis*, 128; Inanda, 2000 feet alt, *Wood*, 592.

A very handsome flowering shrub or small tree, well known in cultivation. In the early spring and summer it bears its fragrant flowers in great abundance; the corollas are white, usually with 5 more or less faint pink lines in the interior of the corolla, sometimes the lines are broken up into dots, sometimes deeper in colour at base of the tube, and sometimes broader and more conspicuous on the lobes for nearly half their length; in the white variety the stigmas are pure white, while in the variety with pink lines and dots the margins of the stigmas are deep dull pink; in both forms the interior of the corolla tube is pale yellow. The native name is isi-Qoba.

Fig. 1, calyx; 2, same opened showing glands; 3, corolla opened; 4, a stamen; 5, style and stigma; *except fig. 3 all enlarged.*

PLTTE 377.

WATSONIA MERIANA, Miller. (Fl. Cap. Vol VI., p. 101.)
Natural Order, IRIDEAE.

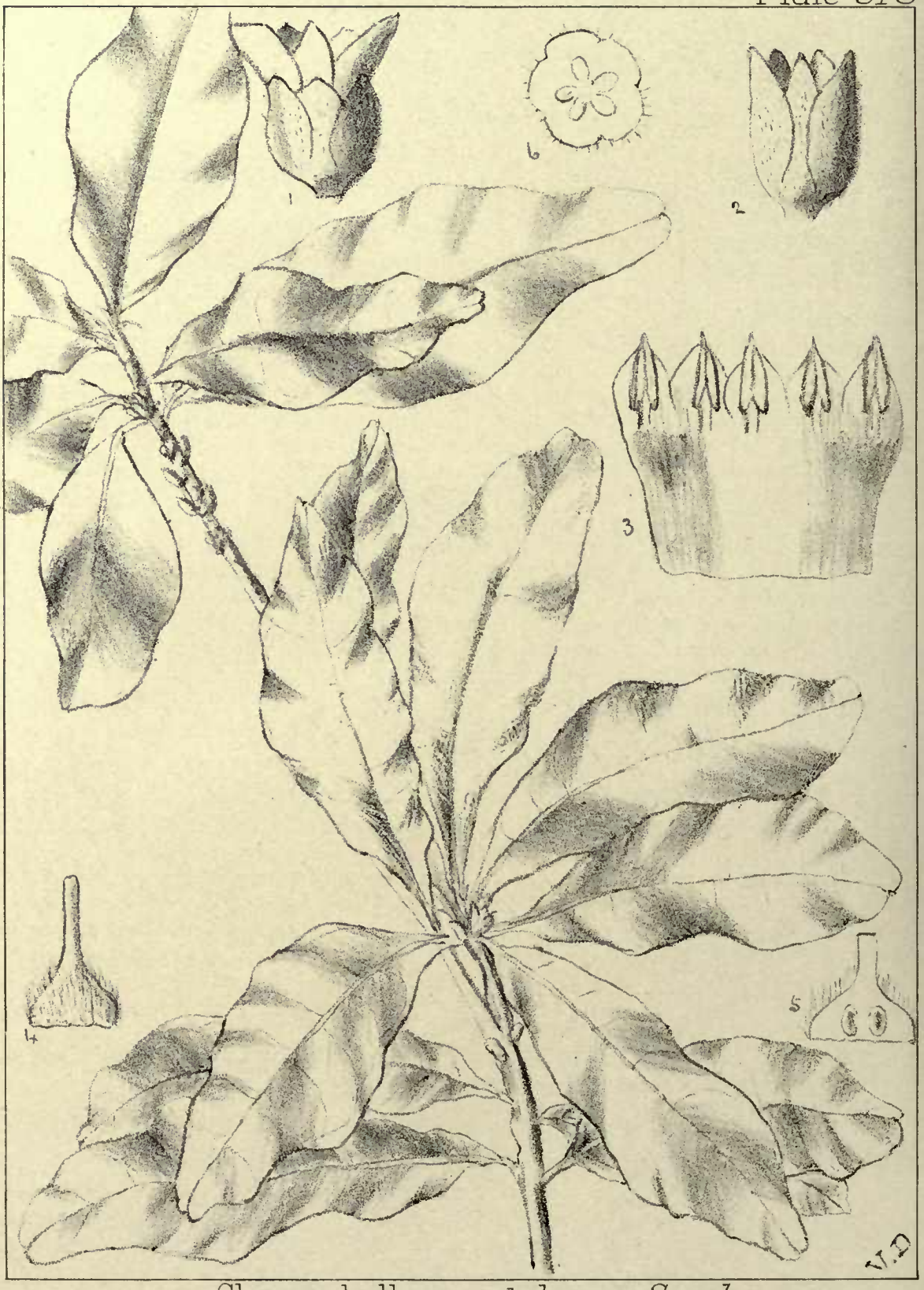
"Corm globose, 1 to 1½ inch diameter; tunics of reticulated fibres ending at the top in a ring of bristles." Stems 3 to 4 feet long. Leaves, basal ones 3 to 4, ensiform, 1 to 2 feet long, ½ to ¾ inch broad (in our specimen), erect, very rigid, mid-vein very prominent, lateral ones fine, numerous. Stem leaves similar but shorter. Inflorescence spicate; spathe-valves oblong-lanceolate, acute, reddish-brown, rigid, striate, 1-flowered, 1 inch long. Flowers 7 to 20 in a lax spike, bright red. Perianth tube curved; 1½ to 2 inches long, gradually widening to throat, cylindrical in upper half, throat ¼ to ⅓ inch diameter, segments oblong, acute, ¾ to 1 inch long. Stamens 3, unilateral, inserted above base of corolla tube, included; anthers ⅓ inch long, linear-oblong, versatile, sagittate at base. Style filiform, 3-branched, branches short, bifid, shorter than the perianth. Ovary sub-globose, 3-celled, ovules numerous, superposed. Fruit an oblong loculicidal capsule. "Seeds globose or angled by pressure."

Habitat: NATAL: On a stony hill near Byrne, 2-3000 feet alt, *Wood*, 1574; not uncommon in open ground in the midlands and upper districts.

A very handsome and common plant in the mid and uplands of the Colony, usually found on stony hills, and always in open ground, where its bright red flowers are very conspicuous. It has long been in cultivation in Europe. It was figured and described as *Antholyza Meriana Linn.* in the Botanical Magizine Vol. XII., pl. 418, and again in the same work under its present name in Vol XXX., pl. 1193.

Fig. 1, corolla opened; 2, a stamen; 3, style and stigma; 4, cross section of ovary; *except fig. 1, all enlarged.*

Watsonia Meriana, *Miller.*



Chrysophyllum natalense, *Sond.*

PLATE 378.

CHRYSOPHYLLUM NATALENSE, Sond. (In Linnea XXIII. (1850) 72).
Natural Order, SAPOTACEÆ.

A tree 30 to 40 feet high with smooth bark. Leaves scattered, petiolate, exstipulate, often clustered near the ends of the twigs, the internodes very unequal in length, shorter towards the ends of the twigs; the very young leaves thickly ferruginous-tomentose, the mature ones green and glabrous above, very minutely dull silvery beneath; lanceolate-oblong, acute or obtuse at apex, tapering gradually to the short petiole, quite entire, mid-vein conspicuous beneath, lateral ones numerous but indistinct; up to 5 inches long, by $1\frac{3}{4}$ to 2 inches wide; petiole up to $\frac{1}{2}$ inch long. Flowers 1 to 3 together, sessile in the axils; fine ferruginous-pilose. Calyx 5-parted nearly to base, the segments ovate, obtuse, erect. Corolla gamopetalous, 5-lobed, lobes ovate, obtuse, the tube a little longer than the calyx, the lobes one-third as long as the tube, pale yellow. Stamens 5, opposite corolla lobes, inserted on its tube and adnate to it; anthers ovate, mucronate, 2-celled, the cells dehiscing laterally. Ovary 5-lobed, shortly pilose, 5-celled. Style short, obtuse. Fruit a berry (not seen).

Habitat: NATAL: *Gueinzius*, 181; Berea, near Durban, 150 feet alt, *Wood*, 8950; without No. or precise locality, *Gerrard & McKen*; Inanda 1800 feet alt, December, *Wood*, 732.

This tree is found in the coast districts of the Colony. Fourcade confines it to the North coast, and this is probably correct. The genus *Chrysophyllum* is so named from the golden appearance of the under side of the leaves of many of the species; it includes some 60 species, natives of tropical and subtropical countries, but the one here described is the only one at present known in Natal. The wood is used by the natives for making the i-Tunga or milking vessel, and for other similar purposes; the fruit is about 1 to $1\frac{1}{2}$ inch in diameter, yellow and eatable, it is pleasantly acid when ripe, but has very little pulp. The native name is um-Tongwane, but *Oncoba spinosa*, a very different tree, bears the same name.

Fig. 1, a flower; 2, calyx; 3, corolla opened; 4, pistil; 5, longitudinal section of ovary; 6, cross section of same; *all enlarged.*

PLATE 379.

CAPPARIS CORYMBIFERA, E. Mey. (Fl. Cap. Vol. I., p. 62.)
Natural Order, CAPPARIDEÆ.

A spiny rambling shrub with white flowers. Stems and branches terete, green, pubescent. Leaves alternate, petiolate, stipulate, oblong to ovate-oblong, quite entire, obtuse at base and apex, mid-vein prominent beneath; glabrous, dark green and shining above, paler and dull beneath, 2 to 3 inches long, 1 to $1\frac{1}{2}$ inch wide. Stipules spiny from a broad base, strongly recurved, pungent. Inflorescence corymbose, terminal; flowers white; pedicels up to $1\frac{1}{2}$ inch long. Sepals 4, strongly concave, ovate-oblong, densely rusty tomentose externally, imbricate in aestivation; 4 to 5 lines long. Petals 4, inserted on a hemispherical torus, imbricate, broadly spathulate or obovate, thickened and densely pilose at base with white hairs, pubescent upwards, light green; 1 inch long, 8 to 9 lines wide in upper portion. Stamens numerous, inserted with petals on the torus, filaments filiform, white; $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long; anthers 2-celled, dorsifixed. Ovary stipitate, the stipe (thecaphore) a little longer than the stamens, light pink. Ovary subglobose, but a little elongate at the apex; ovules numerous, on two opposite parietal placentas. Berry globose, many seeded, the seeds lying in pulp; at maturity compressed, or subreniform, curved.

Habitat: NATAL: *Drege; Krauss; Gueinzius;* Verulam, 200 feet alt, September, *Wood*, 651; Berea, 150 feet alt, *Wood*, February and July.

One species of this genus has already been figured and described in this work (Vol III., p. 214), the species now figured is confined to the coast districts and is of more robust growth than any other Natal species. The flowers in this description are said to be white, and that is their general appearance, in reality the filaments alone are white, but on account of their number and prominence they are the most conspicuous part of the flower. The plant is not in Natal used in any way, and is known to the natives as i-Quaningi.

Fig. 1,a stamen; 2, thecaphore and ovary; 3, longitudinal section of ovary; 4, fruit; *except fig. 4, all enlarged; fig. 4. natural size.*

Capparis corymbifera, *E.M.*

Hebenstreitia polystachya, *Harv. Mss.*

PLATE 380.

HEBENSTREITIA POLYSTACHYA, Harv. MSS. (Fl. Cap. Vol. V., p. 98.)
Natural Order, SELAGINEÆ.

An erect much branched undershrub, reaching to 6 feet high. Branches pubescent, the hairs in broad decurrent lines from node to node. Leaves fascicled, petiolate, very irregular in size, $\frac{3}{4}$ to 3 inches long including the short petiole, lanceolate, acute, margins closely and sharply serrate, except near the base of the leaf, glabrous. Inflorescence spicate, the spikes many flowered, elongating. Bracts ovate-lanceolate, acuminate, $2\frac{1}{2}$ to 3 lines long; calyx ovate oblong, obtuse, membranaceous, 2-nerved, $1\frac{1}{4}$ to $1\frac{1}{2}$ line long, enclosed by the bract and adnate to it at the base. Corolla 4 to 5 lines long, cleft in front to below the middle, limb 4-lobed, the two central lobes narrower than the outer, the short tube cylindrical. Stamens 4, didynamous, inserted on margin of divided corolla tube, filaments short, anthers 1-celled, linear-oblong. Ovary oblong, 2-celled. Style terminal, filiform, obtuse. Fruit small, oblong, enclosed by the calyx or between the calyx and the large bract, 2-celled, cells 1-seeded, one cell often abortive.

Habitat: NATAL: Tugela River, *Gerrard*, 376; Umvoti district in a swamp, *Gerrard*, 1248; Noodsberg, 2500 feet alt, *Wood*, 104; near Enon, *Wood*; Murchison, 1800 feet alt, *Wood*, 301; near Newcastle, *Rehmann*, 7032; Oliver's Hoek sources of Tugela River, 5000 feet alt, *Allison*; in marshes near Richmond, 3000 feet alt, *Schlechter*, 6730; and without precise locality, *Cooper*, 1150.

In Vol I. of this work under plate 67 it was stated that there are 18 species included in the genus Hebenstreitia; since that time the part of the Flora Capensis containing the Order Selagineæ has been published, and several species are added, bringing the number of known species to 31, of which 30 are South African, one of which is also found in Abyssinia, and one other only known from tropical Africa.

Of the 30 South African species 7 are found in Natal, the remainder in the Cape and Orange River Colonies, Transvaal and Pondoland. *H. polystachya* is the tallest and most luxuriant of the Natal species. There appears to have been some doubt as to the colour of the flowers of this species; I have seen them pure white, and also like *H. comosa* with reddish markings, but I think from recollection that the red colour is paler in this species than in *H. comosa.*

Fig 1, calyx and bract; 2, corolla; 3, a stamen; 4, pistil; 5, cross-section of young ovary; 6, cross section of capsule showing abortive cells; *all enlarged.*

PLATE 381.

OCHNA ATROPURPUREA, D.C. (Fl. Cap. Vol I., p. 448.)
Natural Order, OCHNACEÆ.

A shrub reaching to 10 to 12 feet in height, irregularly much branched. Twigs with brown bark often thickly studded with small rough whitish prominences. Leaves alternate, petiolate, simple, exstipulate, oblong, narrow-oblong to ovate, obtuse at base and apex, margins closely serrulate; glabrous, glossy and dark green, mid-vein prominent, lateral ones numerous and fine; 1 to 2½ inches long, ⅓ to 1 inch wide; petiole ½ to 2 lines. Flowers on short depauperated branchlets, solitary or 2-3 together. Calyx of 5 or 6 sepals, which are ovate, obtuse and veiny, at first pale green, spreading, in fruit accrescent and dull scarlet; the whole calyx in flower up to 9 lines diameter, in fruit reaching to 1¼ inch or more. Petals usually 5, but sometimes 6, 7, or more, inserted at the base of a fleshly torus; oblong or subrotund, clawed; 6 to 8 lines long, 3 to 5 lines broad, yellow, soon deciduous. Stamens numerous, hypogynous, erect, nearly half as long as the petals; anthers linear, equalling the filaments in length, 2-celled, the cells opening by terminal pores. Torus hemispherical, light green, at maturity dull scarlet. Carpels 2 to 7 or fewer, 1-seeded; style longer than stamens, stigmas as many as carpels, minute. Drupes 1-seeded, purple when ripe.

Habitat: NATAL: *Krauss; Gueinzius; Blinkwater*, 3 to 4,000 feet alt; *Wood*, April; near Durban, August, *Wood*; Qudeni Forest, 6,000 feet alt, *G. W. Davis;* 108 (Government Herbarium, 8794).

The genus Ochna includes about 25 species, natives of tropical Asia, and tropical and South Africa. In tropical Africa 9 species are found, one of which, *O. pulchra* is also found in Transvaal. In South Africa we have two species only, the one here described and *O. arborea*, Burch., which is a tree reaching to 40 feet in height, and yielding a timber which is hard, heavy and close grained, and is used for many purposes, but *O. atropurpurea* does not reach a sufficient size, and is usually too crooked in growth to be of any value.

Fig. 1, Calyx; 2, petal; 3, stamen; 4, pistil; 5, calyx, receptacle and 5 drupes; 6, cross section of drupe; *fig. 5 natural size, remainder enlarged.*

Ochna atropurpurea, *D.C.*

Senecio deltoideus, *Less.*

PLATE 382.

SENECIO DELTOIDEUS, Less. (Fl. Cap. Vol III., p. 403.)
Natural Order, COMPOSITÆ.

A much branched slender climber, bearing corymbs of yellow flowers. Stem and branches angular or ribbed, green, wide climbing, glabrous. Leaves alternate, petiolate, stipulate, varying much both in shape and size on the same plant, the larger ones triangular and hastate-acuminate, the medium and smaller ones, rounded or tapering to the petiole, neither hastate nor cordate; margins of all unequally serrate; glabrous; 1 to 3 inches long, $\frac{1}{2}$ to 2 inches wide; petiole up to 1 inch long. Stipules when present leaf-like, ear shaped, serrate. Inflorescence corymbose, the corymbs loosely many headed, heads discoid, flowers yellow. Involucre of 5 to 7 oblong, acute scales, about $1\frac{3}{4}$ line long; calycled at base by about 5 short, narrow scales. Corolla tubular, inflated at apex. Stamens 5, anther cells acute at base, connective produced at apex; pappus of many slender, straight rough bristles. Style elongate, the arms recurved, truncate and minutely bristly at apex. Achenes linear, striate, hispid.

Habitat: NATAL: Inanda, 1800 feet alt, *Wood*, 156; without precise locality, *Gerrard*, 329; near Durban, August, *Wood*; also in Cape Colony.

A slender wide climbing plant usually found at edges of bush, where its trusses of yellow flowers are very conspicuous. It is plentiful in the coast districts and occurs at more than 2,000 feet above sea level. I cannot learn that the natives have any distinct name for it, nor is it used in any way so far as known to us.

Fig. 1, flower head; 2, involucre opened; 3, portion of involucre showing calycle; 4, floret; 5, three stamens; 6, style and stigmas; 7, achene; *all enlarged.*

PLATE 383.

PROTORHUS LONGIFOLIA, Engl. (Fl. Cap. Vol. I., p. 522, sub Rhus longifolia.)
Natural Order, ANACARDIACEÆ.

A large dioecious tree reaching to 30 or 50 feet in height, with trunk up to 3 feet in diameter. Bark reddish-grey, thin, even or cracked. Leaves alternate, simple, petiolate, exstipulate, linear-oblong to oblanceolate, quite entire and often undulate, tapering to the petiole, recurved and thickened at apex, sometimes emarginate, margins thickened and horny, mid-vein conspicuous on both surfaces, lateral ones numerous, up to 25 or more on each side; 3 to 6 inches long, $\frac{7}{8}$ to $1\frac{1}{2}$ inch wide, quite glabrous, dark green and glossy above, paler beneath; petiole channelled above $\frac{3}{4}$ to $1\frac{1}{2}$ inch long. Inflorescence puberulous, paniculate, the panicles many flowered, flowers yellow. Calyx gamosepalous, 5-6-lobed, $\frac{3}{4}$ line long, tube short, lobes deltoid or oblong-deltoid, obtuse, erect. Bracts minute. Petals 5-6, inserted outside the disk, greenish-white, sometimes with brownish tinge, ovate-oblong, obtuse, puberulous on outer surface; $1\frac{1}{2}$ line long. Stamens in male flower 5-6, inserted at base of disk, shorter than petals, filaments erect; anthers 2-celled, introrse, in female flowers smaller, and without, or with very little pollen. Ovary seated on a yellow, fleshy, annular, disk, 1-celled, 1-seeded, abortive in the male flowers. Styles 3, very short, truncate, recurved. Drupe oblique-reniform, compressed, glabrous, sub-fleshy, purple, 3 lines long, 4 lines broad, the seed pendent from the wall of the cell near the apex, the seed-cord being adherent to the cell wall for more than half of its length.

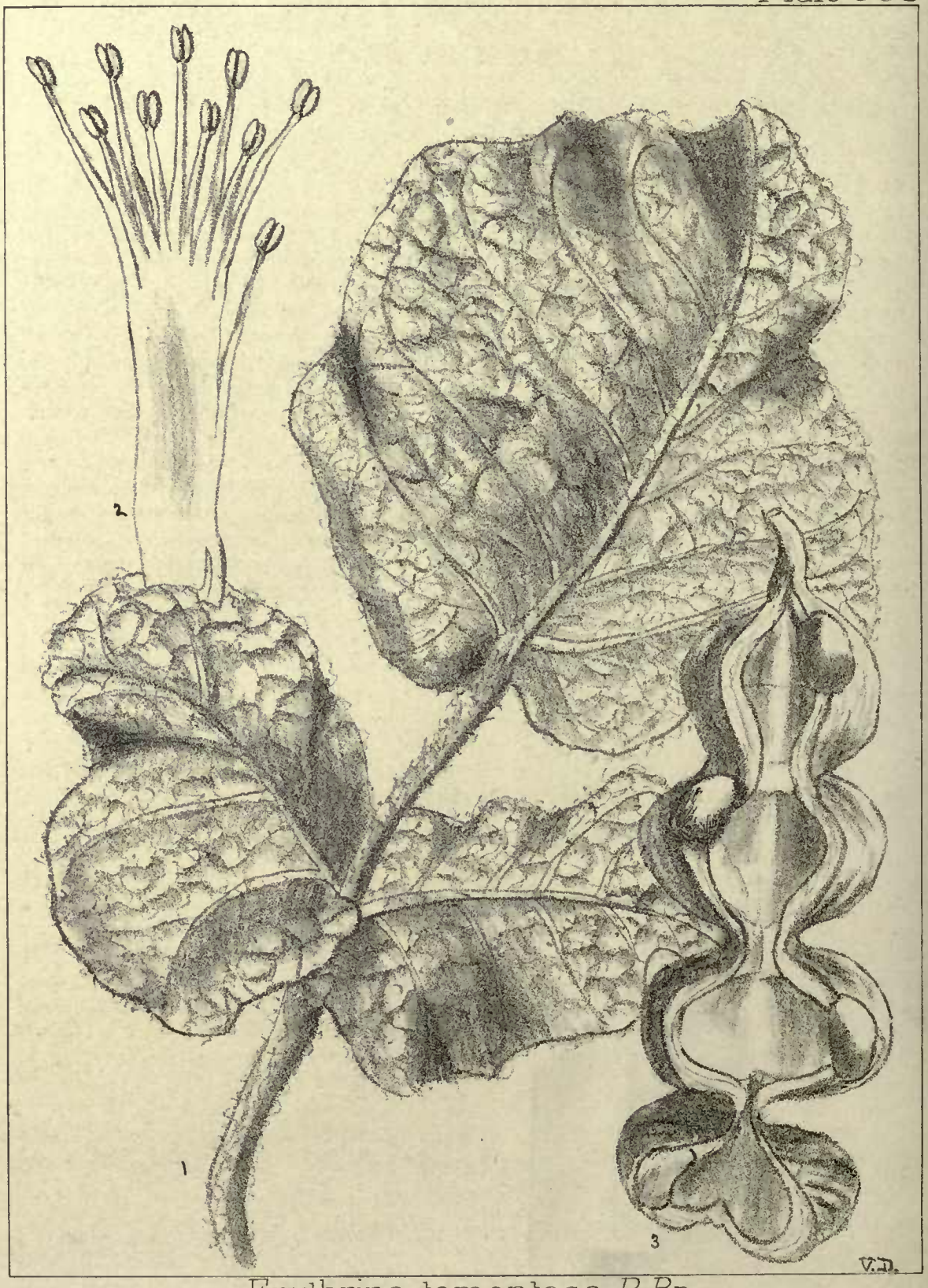
Habitat: NATAL: Woods near Durban, common.

This tree was figured and described in Vol. I. of this work, p. 69, as *Rhus longifolia*, the fact of the genus Protorhus having been established by Dr. Engler, being then unknown to us, and the drawing and description of Plate 383 was finished before the mistake was discovered. In the previous drawing the protuberances at the base of the petiole are figured rather too prominently, they vary much in size, and are often scarcely noticeable; also fig. 5 in plate 69 is a perpendicular, not a cross section of the fruit as stated in the text. Mr. Bazley says of the wood of this tree:—"A very fair wood, stands well for beams and rafters, &c., if cut in winter, if cut in summer it soon decays. Stands best under cover."

Fig. 1, male flower; 2, calyx; 3, portion of corolla of male flower, showing stamens; 4, stamen, front view; 5, same, back view; 6, portion of corolla of female flower, showing abortive stamens; 7, pistil, 8, style and stigma; *all enlarged.*

Protorhus longifolia, *Engler.*

Erythrina lomentosa, *R.Br.*



Erythrina tomentosa, *R.Br.*

PLATES 384, 385.

ERYTHRINA TOMENTOSA, R. Br. (Fl. Cap. Vol. II., p. 238, sub E. latissima.)
Natural Order, LEGUMINOSÆ.

A small tree 10 to 15 feet in height, with thick rough bark, armed with distant prickles. Leaves alternate, on long petioles, pinnately trifoliolate, densely tomentose on both surfaces; terminal leaflet remote, 3 to 6 inches or more from the lateral ones, broadly ovate, obtuse at apex, truncate or subcordate at base; mature ones 10 to 14 inches long and wide; lateral leaflets opposite, subsessile, irregularly and broadly ovate or sub-rotund, 9 to 10 inches long and wide; all strongly veiny beneath, bullate above, greyish-green; common petiole 5 to 10 inches long. Stipules oblong, soon withering, 3 lines long. Inflorescence spicate, the spikes ovoid, many flowered, flowers bright crimson. Peduncles 6 to 8 inches long, stout, finely and densely tomentose. Calyx oblique, spathaceous, finely cleft nearly to base on lower side, the split tube oblong, tomentose and dull red externally, lighter coloured and glabrous within; limb 5-lobed, the lobes filiform, tomentose, soon withering, the tube 1 inch long, lobes $\frac{3}{4}$ inch. Vexillum oblong, emarginate, $2\frac{1}{4}$ inches long, $1\frac{1}{4}$ inch wide, bright crimson, suddenly becoming greenish-white at base; alae of two separate petals, each narrow-oblong, curved, greenish-white, red in upper exposed portion, $\frac{3}{4}$ inch long, 5 lines wide; carina of two separate depressed-ovate petals, white, $\frac{1}{2}$ inch long and wide. Stamens 10, diadelphous or imperfectly monadelphous, a little shorter than vexillum; anthers 2-celled, erect. Style erect, equalling stamens, slightly curved at apex, glabrous; stigma terminal, subobtuse; ovary stipitate, several ovuled. Legume hard and woody, torulose, at length dehiscent, velvetty externally. Seeds oval, red with a linear black scar, $\frac{1}{2}$ inch long by 4 to $4\frac{1}{2}$ lines wide.

Habitat: NATAL: *Krauss*; near Sterk Spruit, *Sanderson*; Inanda, *Wood*. Drawn and described from a tree in the Botanic Gardens, Durban, flowering in September.

This plant was figured and described in Harvey's Thesaurus Capensis as *E. Sandersoni, Harv.*, afterwards in the Flora Capensis as *E. latissima, E. M.* In a note Professor Harvey says that in publishing it as *E. Sandersoni*, he had overlooked two previous discoveries, thus the tree has passed as *E. Sandersoni, E. latissima, Chirocalyx mollissima*, and has now finally settled down under its present name, *E. tomentosa*. It is remarkable for its almost woolly covering, its very curious calyx, and its large leaves. It is usually known in Natal as the "Cork tree," and to the natives as um-kwabakwaba. Its large flowers are very handsome and conspicuous.

Plate 384.—Fig. 1, raceme; 2, flower; 3, calyx; 4, same opened; 5, side bract; 6, lower bract; 7, ala; 8, carina petal; 9, style and stigma; *figs. 5 and 6 enlarged, remainder natural size.*

Plate 385.—Fig. 1, leaf, much reduced; 2, staminal tube opened and enlarged; 3, legume with seeds, *natural size.*

PLATES 386, 387.

KIGELIA PINNATA, D.C. (Fl. Cap. Vol. IV., 454.)
Natural Order. BIGNONIACEÆ.

A tree reaching to 30 feet or more in height, and bearing lax panicles of dull, dark crimson flowers on long peduncles. Bark greyish; twigs stout, terete, glabrous. Leaves scattered, petiolate, unequally pinnate, 2 or 3 pairs and an odd one, common petiole thickened at base, 5 to 8 inches long; lateral leaflets usually opposite, oblong, entire, obtuse and mucronate at apex, unequal sided at base, veins and veinlets prominent beneath; glabrous and shining above, duller beneath; very shortly petiolate, 3 to 5 inches long, $1\frac{1}{4}$ to 3 inches broad; terminal leaflet narrow-oblong, its petiole 4 to 15 lines long. Inflorescence a loose panicle, 12 to 15 inches long; peduncles stout, terete, pendulous, pedicels reaching to 3 inches long, ascending and like the peduncle reddish coloured. Calyx at first completely enclosing the flower, and then 5-ribbed, the ribs meeting in a point at the apex, valvate, afterwards opening widely and becoming 3-4-5-fid at apex; 1 to $1\frac{1}{4}$ inches long, $\frac{3}{4}$ inch wide, oblique. Corolla campanulate, gamopetalous, tube cylindric at base, widening and compressed above, strongly ribbed externally, the ribs greenish-yellow; limb bilabiate, upper lip 2-lobed, erect, lower 3-lobed, the lobes reflexed, bullate, lowest lobe largest, deflexed, the whole corolla spreading to 4 to 5 inches across, dull dark crimson above, reddish between the ribs beneath. Stamens 4, didynamous, with rudiment of the 5th opposite the back lobe of the corolla, inserted near base of corolla tube, subexserted, filaments swollen and pilose at base, reaching to sinuses of corolla; anthers 2-celled, the cells separate nearly to apex, 4 lines long. Disk large, annular, rugose. Ovary 1-celled, puberulous, ovules numerous, multiseriate, on two parietal placentas. Fruit cylindric, 1 foot or more long, 4 to 6 inches thick. Seeds not seen.

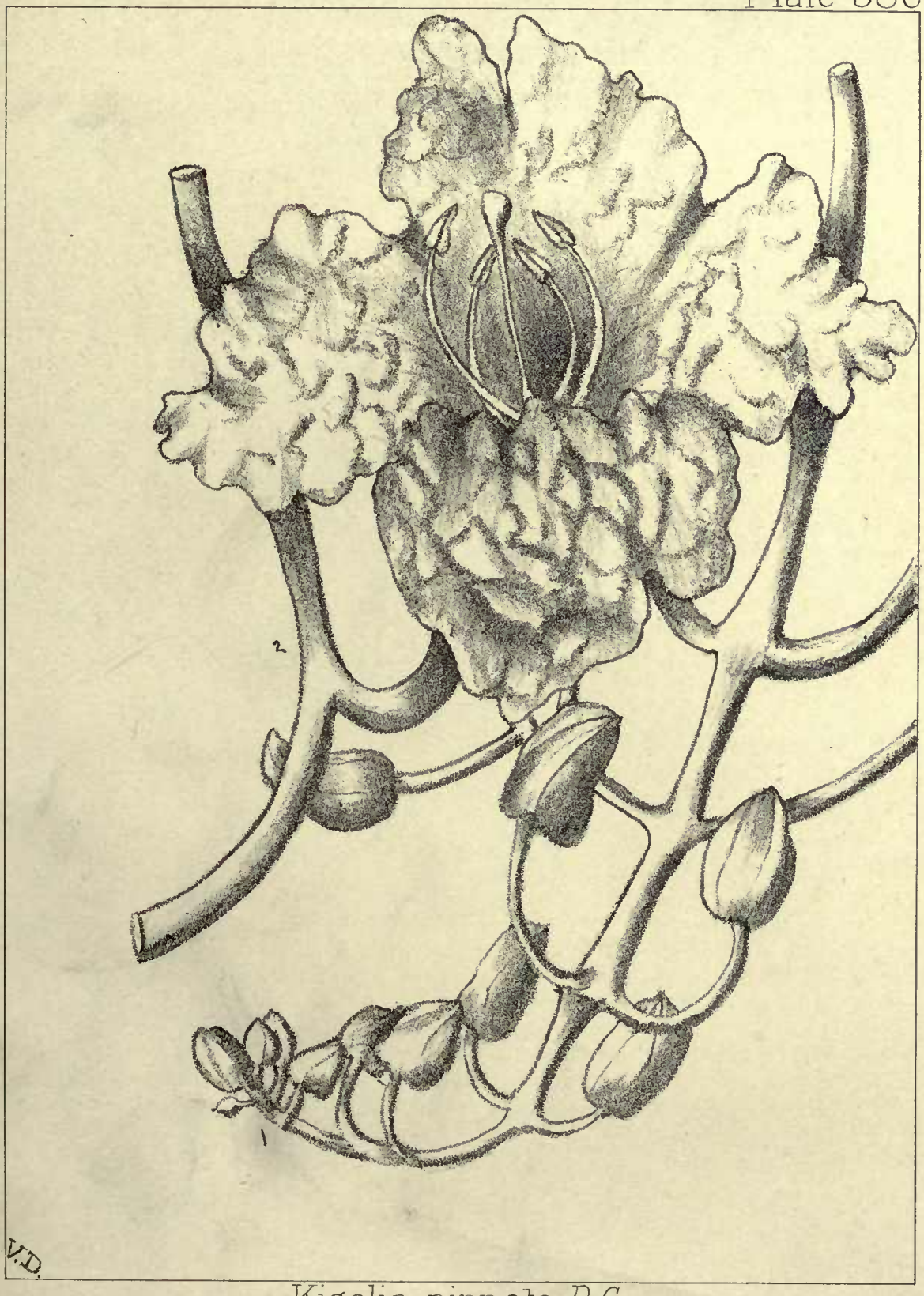
Habitat: NATAL: Tugela valley, and probably in Zululand.

Drawn and described from a tree in flower in Botanic Gardens, Durban, September, 1905.

The genus Kigelia includes 9 species, all tropical African, *K. pinnata* being the only one that has been observed in South Africa. Specimens of it were first sent from Natal by the late Mr J. Sanderson. It is remarkable for the manner in which its fruit is produced. We have never seen more than one to each panicle, and as the fruit enlarges the peduncle elongates, sometimes reaching to 2 feet or more in length. The fruits do not attain the size and weight here that they are said to do in tropical Africa, but we have seen them more than a foot long. It is also said that they have a habit of falling from the tree without warning, making it unpleasant for those who may be under the tree at the time, as the fruits are rather heavy. The flowers are very handsome, but rather unpleasantly scented. The natives use some part of the tree medicinally, and know it as um-Zingula, or um-Fongote.

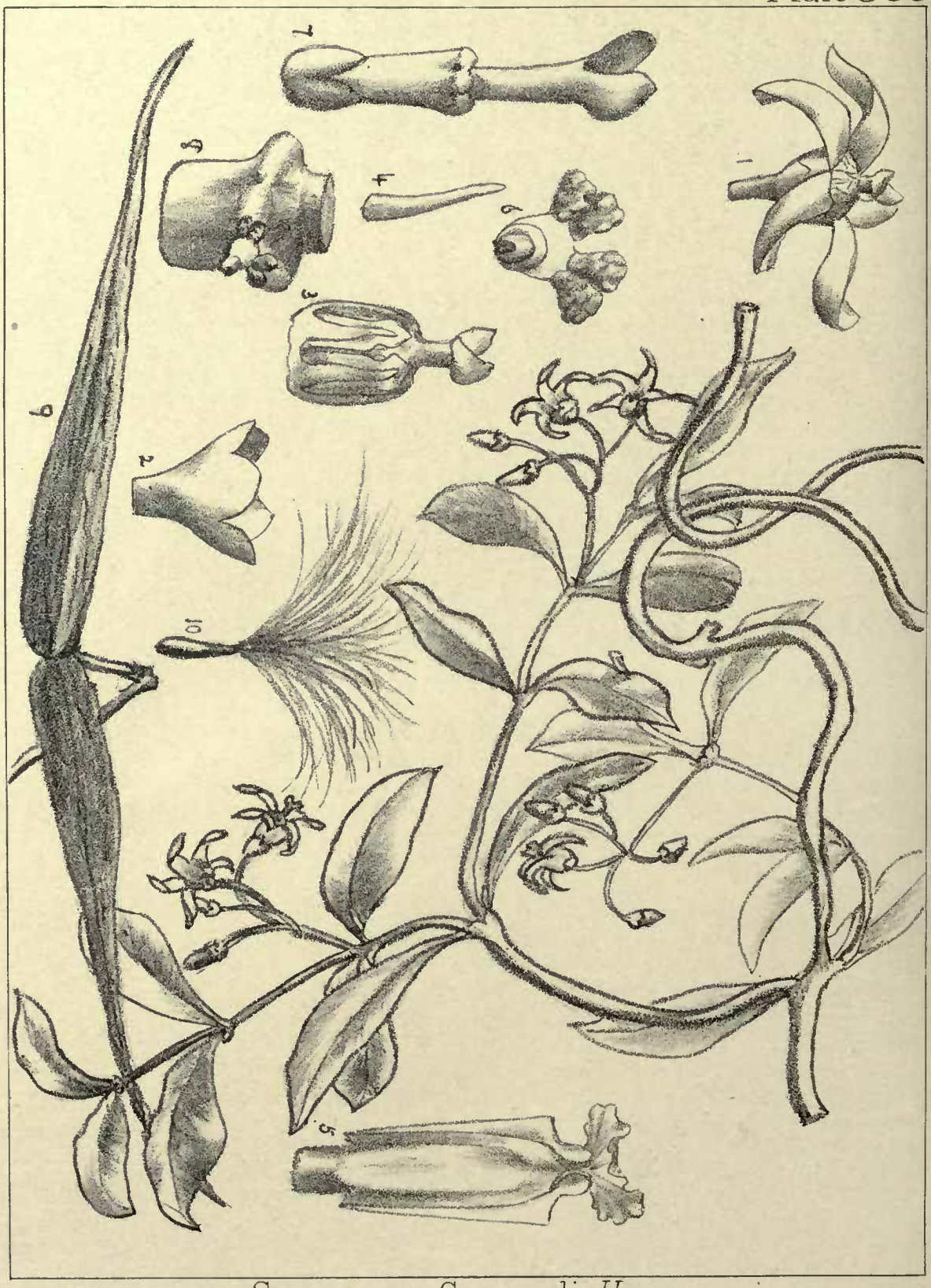
Plate 386.—Fig. 1, panicle; 2, flower.

Plate 387.—Fig. 1, leaf; 2, colyx; 3, base of corolla, showing insertion of stamens; 4, stamen, front view; 5, same, back view; 6, pistil; 7, stigma; *except fig. 1 and 2, all enlarged.*



Kigelia pinnata, *D C.*

Kigelia pinnata, *D C.*



Secamone Gerrardi, *Harv.*

PLATE 388.

SECAMONE GERRARDI, Harv. (Harv. MSS., Schlechter, Jour. of Bot. 1895, p. 353.)
Natural Order, ASCLEPIADACEÆ.

A slender wide climbing shrub with greenish yellow flowers. Stems and branches terete, slender, green, glabrous. Leaves opposite, petiolate, exstipulate, narrow-oblong, acute at apex, tapering gradually to the short petiole, midrib conspicuous on both sides, dark green and glossy above, lighter and dull beneath; $1\frac{3}{4}$ to 2 inches long, 4 to 9 lines wide; petiole 1 to $1\frac{1}{2}$ line long. Inflorescence axillary, in few flowered cymes, peduncle and pedicels $\frac{3}{4}$ inch long, very slender, bracts minute, ovate, $\frac{3}{4}$ line long. Calyx campanulate, 5-lobed, tube 2 lines long, lobes linear-oblong, twisted to the right, spreading, 3 lines long. Coronal lobes minute, linear, incurved. Stamens 5, from base of corolla, filaments adnate to the dilated portion of the style, and terminated by fimbriate, membranous appendages which overlap the stigma. Pollen masses 20, subglobose, attached in fours to the pollen carriers, which are seated on the dilated portion of the style. Style dilated in lower portion and produced beyond the dilated part into a 2-lobed appendage. Follicles acuminate, each 4 inches long by $\frac{1}{2}$ inch wide at base.

Habitat: NATAL: Coast and midlands, common.

The genus Secamone includes nearly 50 species, of which 3 are natives of Natal, the remainder being found in tropical and subtropical regions of the Old World, and adjacent islands. *S. Gerrardi* differs from all other species of the genus by its much larger flowers, campanulate corolla tube, and longer gynostege. It is not uncommon in coast and midlands, usually climbing over trees and shrubs at edges of woods.

This plant was first described by Professor Harvey, but the description does not seem to have been published; it was more lately described by Mr. R. Schlechter in the Journal of Botany for 1895, page 353.

Fig 1, flower; 2, calyx; 3, corona, staminal column and style appendages; 4, coronal lobe; 5, stamen, inside view; 6, pollinia and carrier; 7, young follicles, style and stigma with appendages; 8, thickened portion of style, showing pollinia attached; 9, follicles, *natural size*; 10, seed, *natural size*; *except figs. 9 and 10 all enlarged.*

PLATE 389.

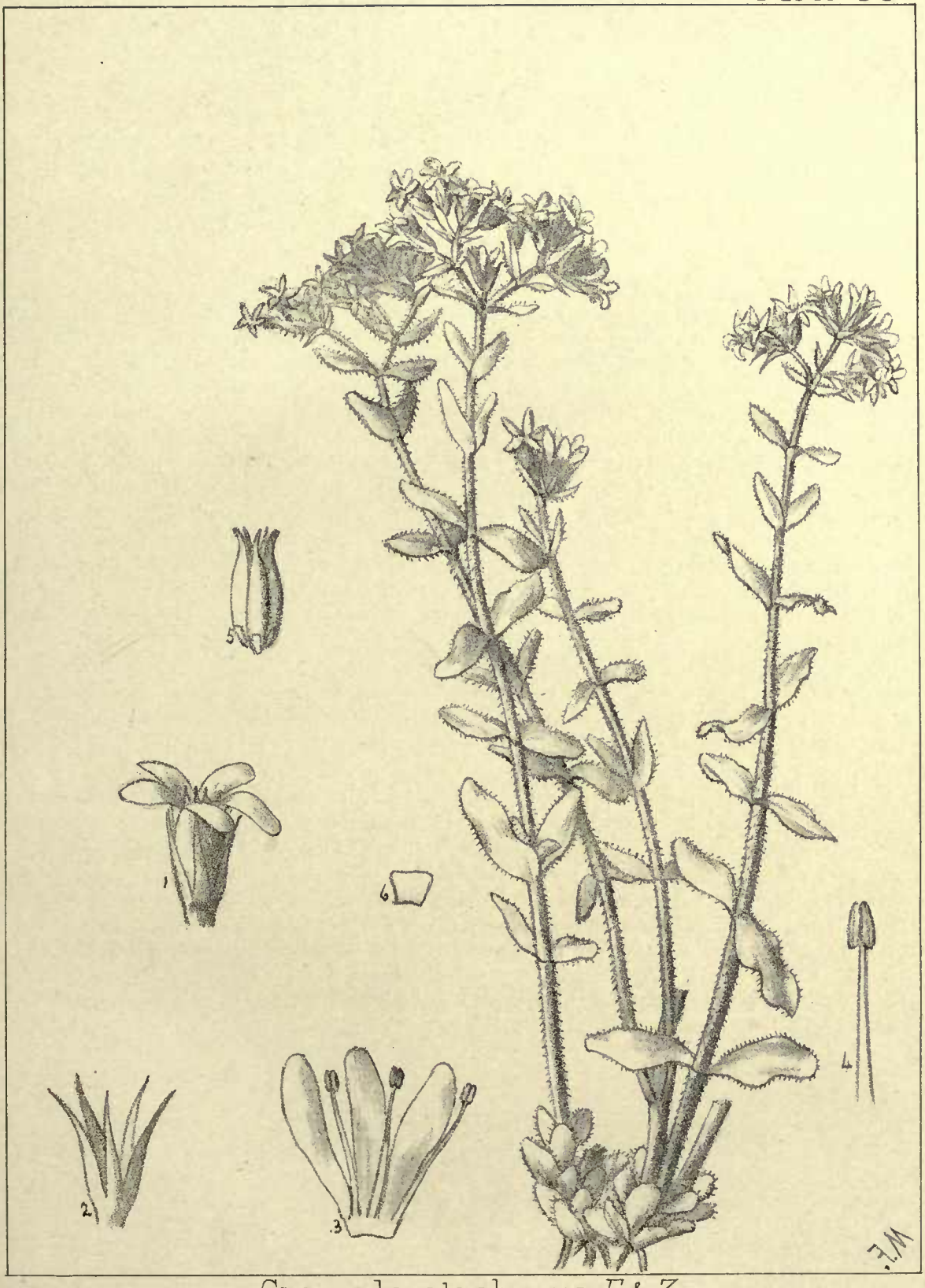
CRASSULA STACHYERA, E. & Z. (Fl. Cap. Vol. II., p. 543.)
Natural Order, CRASSULACEÆ.

An erect plant 6 to 12 inches or more high. Stems herbaceous, simple or more or less branched at the base, thickly clothed with stiff white hairs, usually leafy to base. Leaves opposite, exstipulate, sessile, usually densely clustered at base of stem, the distinct pairs clothing the stem from base to apex; ovate to oblong or subrotund, quite entire, glabrous or subglabrous on the surfaces, and conspicuously ciliate with stiff white and commonly reversed bristles, occasionally with a few similar bristles at base of leaf; varying much in size in different specimens (from 3 to 6 lines in our specimens). Inflorescence cymose, the cymules terminal, few flowered. Calyx 5-parted nearly to base, the lobes acuminate, erect; bracts small, ciliolate like the leaves. Corolla gamopetalous, 5-lobed, the lobes free almost to base, subspathulate, white. Stamens 5, a little shorter than the corolla; anthers 2-celled. Squamae minute, broadly truncate. Carpels 5, styles subulate.

Habitat: NATAL: Rovelo Hills, *Dr. Sutherland*; near Botha's Hill Railway Station, 2500 feet alt, *Wood*, 4629; Inanda, 2000 feet alt, March, *Wood*, 977; Impendhle, March, *Wylie*.

This plant is not uncommon in the Colony, and is usually found in rocky places and under shade. In the Flora Capensis there appears to be some confusion as to the species; the leaves are said to be albo-hirsute, which is not the case with any of our specimens, also that the inflorescence is disposed "either in a long leafy spike, or interruptedly corymbose." This is not so in any of our specimens which have been examined and verified by Dr. S. Schonland, F.L.S., and none of our specimens have leaves so large as those described in the Flora Capensis.

Fig. 1, flower; 2, calyx; 3, portion of corolla opened; 4, a stamen; 5, carpels; 6, a squama; *all enlarged.*



Crassula słachyera, *E & Z.*

Schotia brachypetala, *Sond.*

PLATE 390.

SCHOTIA BRACHYPETALA, Sond. (Fl. Cap. Vol. II., p. 274.)
Natural Order, LEGUMINOSÆ.

A tree reaching to 20 feet in height, glabrous in all parts, bearing clusters of bright scarlet flowers which are frequently produced on the stem or branches. Bark brown, rough. Leaves alternate, equally pinnate, leaflets in 4-5 opposite pairs; common petiole 3 to 4 inches long, swollen at base, petiolules scarcely 1 line long, a little swollen; leaflets oblong, ovate-oblong or elliptical, unequal sided at base, obtuse, emarginate or finely mucronulate at apex, dark green and shining above, dull beneath; $\frac{3}{4}$ to $2\frac{1}{2}$ inches long, $\frac{1}{2}$ to $1\frac{1}{2}$ inch wide; veins conspicuous but not prominent; stipules minute, soon deciduous. Inflorescence paniculate, the panicles axillary, terminal, or often on the stem and large branches, peduncles short, many flowered; pedicels 2 to 3 lines long; bracts ovate, deciduous. Calyx gamosepalous, 4-lobed, $\frac{3}{4}$ inch long, the lobes equalling the tube, tube conical, lobes ovate, obtuse, erect. Petals 5, minute, 4 very minute, bristle-like, $\frac{1}{4}$ to $1\frac{1}{4}$ line long, alternate with calyx lobes, 1 linear-spathulate, opposite a calyx lobe, $4\frac{1}{2}$ lines long. Stamens 10, alternate ones shorter, much exserted from calyx tube, monadelphous, forming a cup a base. Ovary stipitate, the stalk adnate to calyx tube, tubercular rugose on both margins, many seeded. Legume bark brown, woody, margined, thickly covered with minute protuberances; 2 to 4 inches long, several seeded; seeds compressed, oblong, $\frac{1}{2}$ inch long by 4 lines broad.

Habitat: NATAL: *Gueinzius*; in sheltered valleys where soil is dry and rocky, *Sutherland*; at 2000 feet alt, *Sanderson*; coastlands, September, *Wood*, 1367.

Drawn and described from specimens gathered near Durban, October, 1905.

A very handsome tree when in full flower, and well worth cultivation. The figure in the Thesaurus Capensis, Vol I., p. 32, represents the minute petals as all alike, but in the numerous fresh flowers examined by us they are as stated in the text. The legumes that we examined were a year old and much damaged by insects, they were 2 to 4-seeded and no arillus was noted. The wood is said to be much like walnut, but closer in the grain, and a splendid furniture wood. Mr. Bazley says of it: "I have several pieces of furniture made of it, and know it to be a valuable wood. It contains a lot of tannin, and I call it African walnut." He also says in another letter: "It is a splendid furniture wood, but bad to work as the dust makes the eyes sore if it enters them. Takes a splendid polish, and if unpolished gets much darker."

Fig. 1, calyx; 2, flower with sepals removed; 3, a stamen; 4, ovary; 5, a bract; *all enlarged.*

PLATE 391.

CYRTANTHUS OBLIQUUS, Ait (Fl. Cap. Vol. VI., p. 219.)
Natural Order, AMARYLLIDEÆ.

Bulb ovoid 2 to 4 inches diameter, tunics brown, membranous. Leaves 6 to 12, erect, strap-shaped, distichous, entire, obtuse, 1½ to 2 feet long, 1 to 2 inches broad, margins smooth, reddish, a little twisted, contemporary with the flowers. Peduncle subterete 1 to 2 feet long, ½ to ¾ inch diameter, green, not spotted or mottled. Flowers 6 to 12 in an umbel, drooping, inodorous. Spathe valves 4, broadly oblong lanceolate, broad based, acuminate, veiny. Pedicels ½ to 1 inch long, strongly recurved, bracteoles linear-subulate. Perianth 2 to 3 inches long, tube twice as long as the segments, yellow-green from base to throat, more or less striped and tinged with red, or bright red, the lobes green; imbricate, ¾ to 1 inch long, ½ inch broad, 1 to 1¼ inch diameter when open, alternate ones minutely hooded and glandular, the others very obtuse. Stamens 6, inserted low down in the perianth tube, equal, free portion 14 lines long; anthers oblong, ⅓ inch long, reaching a little more than half way up the segments of the corolla. Ovary oblong, triangular with very obtuse angles, 3-celled, cells many ovuled, ovules superposed. Stigma minutely 3-lobed at apex. Capsule not seen.

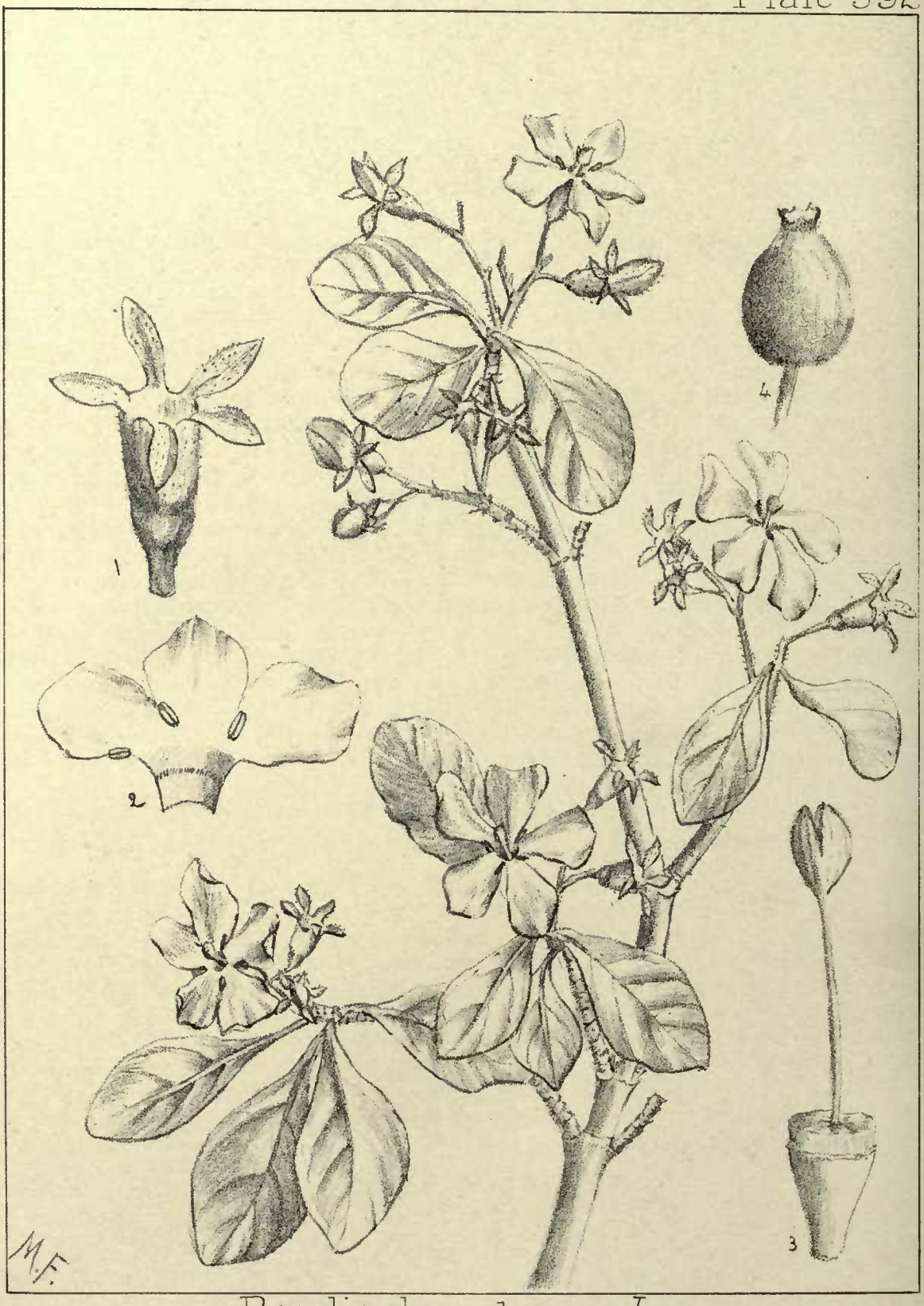
Habitat: NATAL: Camperdown, near the Waterworks; flowered in Botanic Garden, October, 1905. *Wood*, No. 9936.

Three species of this genus have already been figured and described in this work, C. *angustifolius* in Vol. I., p. 5, *C. McKenii*, in Vol. I., p. 51, and *C. sanguineus*, in Vol. IV., p. 341.

In writing the description of *C. obliquus*, I was inclined to think that the specimen that we had might possibly belong to an undescribed species, as in comparing it with the description in the Flora Capensis the following differences were noted: The leaves are straight not falcate, contemporary with, not produced after the flowers, the perianth is straight or nearly so, not curved, the stamens are equal, not biseriate, the stigma is 3-lobed, not capitate, the peduncles are green, not mottled, the colour of the flower is as above described, the perianth not "tipped with" green, but the lobes are wholly green, the tube only coloured, the amount of the red colouring differing more or less in different flowers. I therefore sent a specimen of the plant to my friend Dr. H. Bolus, of Capetown, who has kindly compared it with his specimen and with the figures in Andr. Bot. Rep. t. 265, and Jacquin's Hort. Schoenbr. t. 75, and he finds that both of these figures correspond with our specimens even to the colouring of the flowers. The plant therefore is as above named, but Natal is not credited with it in the Flora Capensis, though it appears in the "Preliminary Catalogue of Natal Plants" published in 1894. I should have said that the only figure that we have of this plant is that in Bot. Magazine, Vol XXVIII., t. 1133, published in 1808; the peduncle in this figure is represented as mottled, and the perianth lobes barely tipped with green The plant is known to the natives as "Matoonga," and is used by them medicinally. The flowers are very handsome and the plant well worth cultivation.

Fig. 1, flower opened; 2, apex of inner perianth lobe; 3, same of outer lobe; 4, stamen, front view; 5, same back view; 6, style and stigma; 7, spathe valve; 8, bract; *figs. 1, 7, 8, natural size; remainder all enlarged.*

Cyrtanthus obliquus, *Ait.*



Randia dumetorum, *Lam.*

PLATE 392.

RANDIA DUMETORUM, Lam. (Fl. Cap. Vol. 3, p. 7, sub. R. Kraussii, Harv.)
Natural Order, RUBIACEÆ.

An erect shrub, sometimes spiny, bearing numerous white flowers which become yellow in fading. Bark rough, dull, glabrous, branches elongated, often producing arrested lateral shoots; sometimes spiny. Leaves opposite, petiolate, stipulate, oval, ovate-oblong or obovate, rounded at apex, tapering to the petiole at base, veins pinnate, 4 to 6 on each side of the midrib; finely hispid on both surfaces; 1 to 2 inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inch wide; petiole 2 to 4 lines long, narrowly winged in upper portion by the decurrent lamina of the leaf; stipules subulate, 2 lines long, hispidulous like the petiole. Inflorescence axillary or terminal on short lateral branchlets; peduncles 2 to 5-flowered; pedicels up to $\frac{1}{4}$ inch long, hispidulous Calyx gamosepalous, 5-lobed, tube campanulate, pubescent, $\frac{1}{4}$ inch long, 2 lines wide at throat, lobes ovate oblong or spathulate, unequal, broad based with wide interspaces, up to $\frac{1}{4}$ inch long, spreading. Corolla gamopetalous, 5-lobed, silky externally, tube a little longer than the calyx tube, shorter than its lobes, cylindrical, with a ring of silky white hairs a little above the base, lobes ovate, horizontally spreading, the whole corolla 1 inch diameter. Stamens 5 inserted in throat of corolla, alternate with its lobes; anthers linear-oblong, subsessile, exserted, 2-celled, brown. Ovary inferior, 2-celled, many seeded. Stigma club-shaped, 2-lobed at apex. Fruit dry, crowned by the remains of the calyx.

Habitat: NATAL: *Krauss*, 129; *Sanderson*, 200: *Gerrard & McKen*, 864; near Durban, May, *Wood*, 1313; and October, 9934.

The genus Randia contains about 90 species, natives of tropical and subtropical regions, three only of which are found in Natal, while at least 15 are known from tropical Africa. *R. dumetorum* appears in the Flora Capensis as *Randia Kraussii*, Harv., and has also been known as *Randia lachnosiphonium*, but the name here given is the correct one; it appears to be rather a variable plant, and is not uncommon in the coast and midland districts of the Colony. It is too small to have any value as timber, and so far as known to us it has no valuable properties; it bears flowers in abundance, and is probably worth cultivation.

Fig. 1, calyx; 2, portion of corolla opened; 3, ovary, style and stigmas; 4, fruit natural size; *except fig. 4, all enlarged.*

PLATE 393.

VITIS QUADRANGULARIS, Lin. (Fl. Tropical Africa, Vol. I., p. 399.
Natural Order, AMPELIDEÆ.

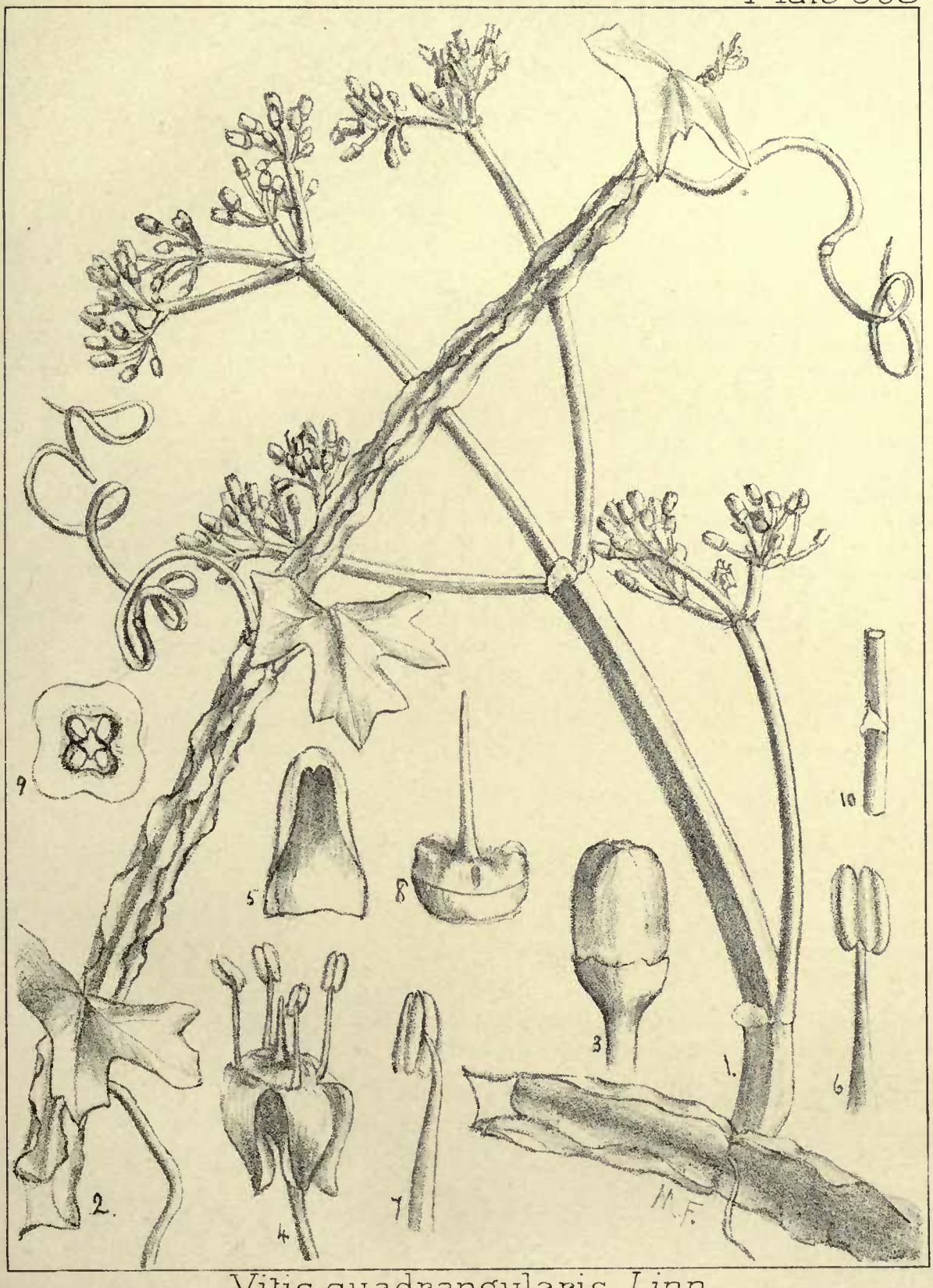
A wide climbing branching plant with succulent, quadrangular, green, winged stems and branches which are constricted at the nodes, deeply furrowed especially the younger portions, the angles acute and more or less winged, the wings not ciliate, the whole plant quite glabrous. Leaves alternate, very few, petiolate, stipulate, usually deeply 3-lobed, the lateral lobes patent, almost truncate, and obscurely 3-lobed, and mucronate, the terminal lobe erect, trilobed at apex, the lobes mucronate, the sinuses wide and rounded; occasionally a leaf is broadly ovate, with 2 or 3 shallow mucronate lobes on each side; texture rather thick, lateral veins more or less immersed; dark green and shining on both surfaces; 1 to 2 inches wide, $\frac{3}{4}$ to 1 inch long (in our specimens), petiole 3 to 8 lines long, channelled above; stipules broadly ovate or semi-rotund, membranous edged, 2 to 3 lines long and wide; tendrils long, slender, furnished with a minute deciduous bract. Inflorescence cymose, the cymes lateral, compound. Peduncles 6 to 12 inches long, many flowered, pedicels $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Calyx cyathiform, bluntly and indistinctly lobed. Petals 4, greenish-yellow on inner surface, outer brownish, hooded at apex, reflexed and very soon deciduous, $1\frac{1}{4}$ by $1\frac{1}{2}$ line long. Disk cup-shaped, entire. Stamens 4, filaments very short, erect; anthers 2-celled, dorsi-fixed. Ovary superior, 2-celled, cells 2-seeded. Fruit $\frac{1}{2}$ inch long by 4 lines wide, ovate, red when ripe.

Habitat: NATAL: Zululand, *Wood*, 9935.

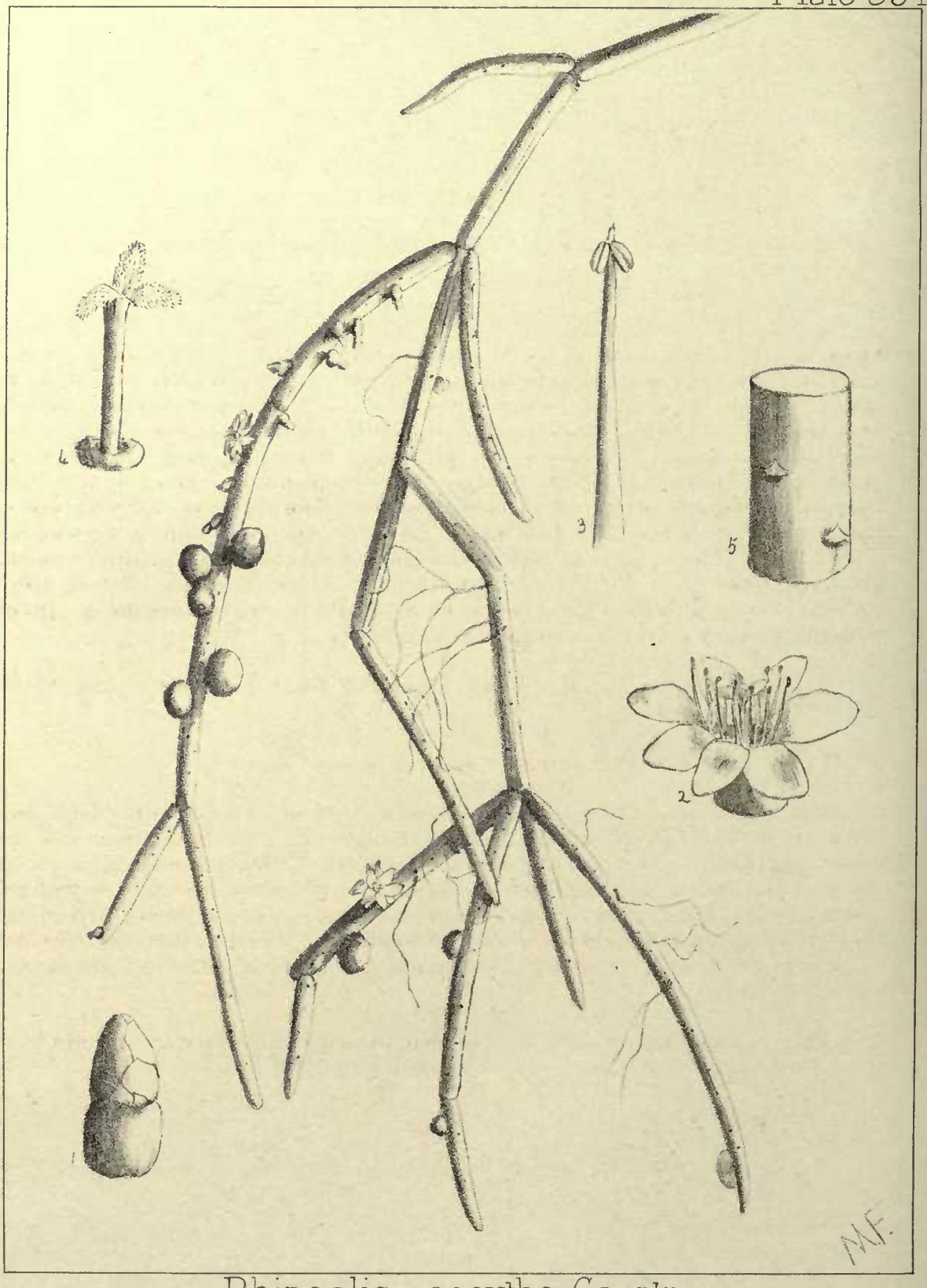
Drawn and described from a plant brought from Somkeli, Zululand, and which flowered in the Botanic Gardens, Durban, October, 1905.

A singular wide climbing plant which trails over trees and shrubs, and has very much the appearance of a member of the Cactus family; the fruit is said to be eatable. It is also found in tropical Africa, Arabia, India and the Moluccas.

Fig. 1, portion of stem and inflorescence, *natural size*; 2, branch and leaves, *natural size*; 3, a bud; 4, flower; 5, petal; 6, stamen, front view; 7, same, back view; 8, disk, ovary, style and stigma; 9, cross section of ovary; 10, portion of tendril showing bract; *except figs. 1 and 2, all enlarged.*



Vitis quadrangularis, *Linn.*



Rhipsalis cassytha, *Gaertn.*

PLATE 394.

RHIPSALIS CASSYTHA, Gaertn. (Fl. of Mauritius and Seychelles. p. 133).
Natural Order, CACTACEÆ.

An almost leafless plant with terete stems, bearing sessile white flowers. Stems and branches elongate, terete, green, glabrous, 2 to 3 lines diameter, sometimes reaching to 9 feet in length, and scarcely differing in diameter from base to apex; branches divaricating or sometimes whorled, occasionally rooting. Leaves very minute, scale-like, scattered. Flowers solitary on the branches, sessile, white. Calyx adnate to the ovary, and not projecting beyond it, irregularly toothed; petals 5 to 8, inserted at throat of calyx, patent, persistent, spreading to 5 lines diameter. Stamens about 20, shorter than the petals and inserted with them; anthers 2-celled, cells divergent at base; connective produced slightly beyond the cells. Style filiform, stigmas 3-4, slightly longer than stamens, and with minute glandular hairs on upper surface and margins. Ovary inferior, 1-celled, many ovuled. Berry globose, 3 lines diameter, at first dull reddish, becoming lighter coloured with age; seeds minute, black, shining.

Habitat: NATAL: Hanging from trees and rocks in midland and upper districts.

Drawn from a plant growing on wood in Botanic Gardens.

The genus *Rhipsalis* includes 30 or more species, of which the plant here described is the only one found in Natal. It also occurs in Madagascar and the Mascarine Islands. It is also the only species of the Order Cactaceæ which is so far as at present known indigenous to Africa, though more than one introduced species are becoming more or less nuisances in some parts of South Africa, but they are all really natives of the American continent. The present species has no economic or decorative value, and is only inserted here on account of its rarity, and somewhat peculiar distribution.

Fig 1, a bud; 2, a flower; 3, a stamen; 4, style and stigma; 5, portion of stem showing the minute leaves; *all enlarged.*

PLATE 395.

TULBAGHIA VIOLACEA, Harv. (Fl. Cap. Vol VI., p. 407).
Natural Order, LILIACEÆ.

Rootstock tuberous. Basal rudementary leaves membranous; leaves 6 to 10 or more, linear, erect, membranous and sheathing at base, concave on upper surface for nearly the whole length, rounded beneath; green, glabrous; 8 to 12 inches long, $\frac{1}{8}$ to $\frac{1}{4}$ inch broad. Peduncles erect, terete, 1 to 2 feet long, umbel 10 to 20-flowered; spathe valves 2, lanceolate from a broad base, membranous, tinged with lilac with deeper coloured veins; pedicels 1 to $1\frac{1}{2}$ inch long. Perianth salver-shaped, tube subcylindrical, very slightly swollen at base, $\frac{1}{2}$ to $\frac{3}{4}$ inch long, segments 6, oblong lanceolate, half as long as the tube; coronal lobes 3, on inner segments of perianth at base, truncate, acute or emarginate at apex, 1 to $1\frac{1}{2}$ line long. Stamens 6, subsessile on tube of corolla in two series, the upper 3, not reaching to the throat of corolla. Ovary sessile, 3-lobed, lobes rounded; 3-celled, cells many ovuled, ovules superposed. Style short thick, stigma capitate. Capsule not seen.

Habitat: NATAL: Not certainly known to us.

The genus *Tulbaghia* is quite an African one; 10 species are described from South Africa, of which 5, including the above described one are found in Natal, the only one known to be confined to Natal being *T. natalensis, Baker*, which was described in the present work Vol. I., plate 29, while "two or three species occur in the mountains of Tropical Africa." Tubers of this plant were given to the Gardens by Mrs. Todd of Maritzburg; it was said that they had been found near Byrnetown, but we were not quite sure of this; the species was gathered in Kaffrarian Mountains, by the late Mrs. Barber, and is also found in Cape Colony, but we have not met with it in Natal. It is rather a pretty plant, and worth cultivation, but it has the rather unpleasant garlicky odour which is also possessed by other members of the genus.

Fig. 1, corolla opened, showing insertion of stamens, and coronal lobes; 2, pistil; 3, cross section of ovary; *all enlarged.*

Tulbaghia violacea, *Harv.*

Gloriosa virescens, *Ldl.*

PLATE 396.

GLORIOSA VIRESCENS, Ldl. (Fl. Cap. Vol. VI., p. 526).
Natural Order, LILIACEÆ.

Rootstock tuberous, often branched, white. Stems slender, elongated, climbing, green, terete. Leaves sessile, lower crowded, and with the central ones opposite or ternate, upper ones scattered and smaller, all oblong to oblong-lanceolate and produced into a tendril at apex, margins quite entire, midrib very prominent beneath; glabrous, dark green and shining on both surfaces; 3 to 5 inches long including the tendril, 1 to $1\frac{1}{2}$ inch wide. Flowers axillary or terminal on stem and branches, peduncles terete, green, strongly recurved at apex. Perianth segments 6, persistent, very strongly reflexed and curved, clawed, the margins of the claw incurved; lamina lanceolate, acuminate, margins more or less undulate, edge of claw and lower portion of segment sulphur yellow, upper portion bright red, becoming darker in age; central nerve very prominent beneath, and thickened at the very base; $2\frac{1}{2}$ inches long, by $\frac{3}{4}$ inch wide. Stamens 6, hypogynous, filaments half to two thirds as long as the perianth segments, horizontally spreading, filiform; anthers dehiscing laterally, and extrorsely. Ovary sessile, oblong, 3-celled, very deeply 3-lobed, many ovuled, ovules superposed; style filiform, equalling the stamens, horizontal, trifurcate, often unequally so, the branches truncate and stigmatose at apex internally. Capsule coriaceous, septicidally 3-valved; seeds globose, dark red and shining.

Habitat: NATAL: Sea coast only. *Wood*, 1583; *Plant*, 19; *Gerrard*, 736.

Drawn from plants in flower, Berea, January, 1906.

A very handsome plant well known in cultivation in Europe where it is much admired, but the roots are said to be very poisonous. A peculiarity in this plant worth notice is the very abrupt bending of the style almost at right angles. Of this genus there are 5 known species, the above described one being the only one indigenous to Natal; in Tropical Africa the whole of the 5 species are found, one of which is also found in Tropical Asia, and *G. virescens* is also found in Madagascar. The genus was formerly known as *Methonica*, and our plant has been known as *M. virescens; M. virescens var. Plantii; M. Petersiana* and *M. platyphylla.*

Fig. 1, tuberous rootstock; 2, a stamen; 3, pistil; 4, cross section of ovary; 5, capsule; fig. 1 and 5 *natural size*, 2, 3, and 4 *enlarged.*

PLATE 397.

MELASMA SESSILIFLORUM, Hiern. (Fl. Cap., Vol. IV., p. 35).

Natural Order, SCROPHULARIACEÆ.

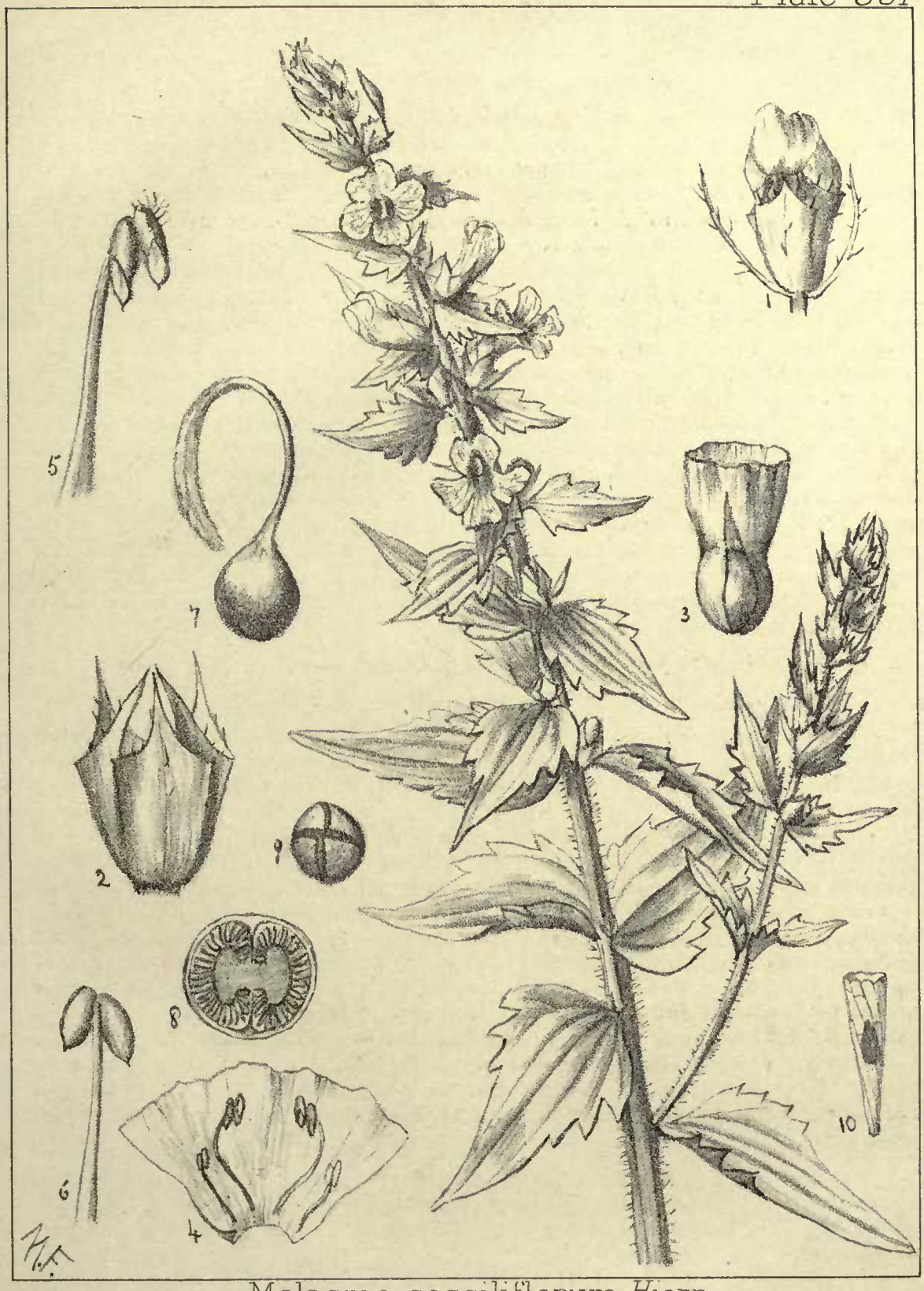
An erect herb, simple or loosely branched, 6 to 24 inches high, bearing terminal racemes of yellow flowers. Stems and branches leafy, tetragonal, glandular-hispid with white hairs. Leaves opposite and alternate, subsessile, broadly ovate to lanceolate, acuminate, lower ones obtuse, upper ones acute, margins coarsely and more or less acutely toothed or lobed for two thirds their length from the base, the upper third quite entire, 5 to 7-veined, scabrid, $\frac{1}{4}$ to $1\frac{3}{4}$ inch long, 3 to 13 lines broad. Inflorescence in terminal spikes or racemes, the flowers solitary in the axils of the floral leaves which become gradually smaller upwards. Calyx 5-lobed, tube widely campanulate, lobes triangular, acuminate, sparsely ciliate; 5-angled, tube $2\frac{1}{2}$ lines long, lobes $3\frac{1}{2}$ lines, bibracteate at base, bracts 2, linear, occasionally broader and lacerate, a little shorter than the calyx, ciliate. Corolla one third longer than calyx, tube campanulate, longer than the lobes, limb bilabiate, upper lip 2-lobed, erect or a little reflexed, lower 3-lobed, the lobes spreading, entire, bifid or emarginate. Stamens 4, didynamous, filaments curved, glabrous; anthers 2-celled, mucronate and diverging at base, those of the longer stamens largest, the highest of the pair having a minute tuft of hairs on the suture about $\frac{3}{4}$ from base, the whole of the cells dehiscing from base to $\frac{1}{4}$ from apex. Style longer than stamens, terete, very strongly recurved, oblong-lingulate, the stigmatic portion compressed. Ovary globose, quite glabrous, 2-celled, many seeded. Capsule enclosed in the calyx, globose, many seeded; seeds sublinear with a very loose testa.

Habitat: NATAL: Near Durban, *Wood*, 142, and numerous collectors.

Drawn and described from specimens gathered near Durban, January, 1906.

A rather singular plant which is most probably parasitic on roots of other plants. Though we have examined a large number of flowers we are quite unable to find both bracts and bracteoles as stated in the Fl. Capensis, usually the calyx is bibracteolate, and the bracts linear, but occasionally they are expanded and lacerate, showing their close connection with the very numerous floral leaves, the flowers also are not sessile, but shortly pedunculate. The corolla tube in its earlier stages is quite entire at the base, but when fully expanded it is slit from the base upwards possibly by the growth of the ovary, and it is bright yellow without markings of any kind. The seeds are somewhat peculiar, the testa or outer covering being exceedingly loose and hollow. The anthers dehisce from the base upwards for about two-thirds of their length, and the upper cell of the longest anther has a miuute tuft of hairs about two thirds or more from base. This plant has been known in Natal for many years as *Alectra melampyroides* (*Bth.*), but has been lately removed to the genus *Melasma*. The drawings and dissections were made from a large number of freshly gathered plants in full flower, not from dried specimens. The plant is fairly common all over the Colony, and South Africa generally.

Fig. 1, a bud; 2, calyx; 3, base of mature corolla showing opening; 4, same opened showing insertion of stamens; 5, a stamen, front view; 6, same, back view; 7, pistil; 8, cross section of ovary; 9, capsule seen from above; 10, seed; *all enlarged.*



Melasma sessiliflorum, *Hiern*.

Polygala oppositifolia, *Linn.*

PLATE 398.

POLYGALA OPPOSITIFOLIA, Linn. (Fl. Cap. Vol. I., p. 82).
Natural Order POLYGALEÆ.

A slender, sparingly branched undershrub bearing purple flowers in lax terminal racemes. Stems several to many from a woody rootstock, terete or obtusely angled, glabrous, green or tinged with pink, reaching to two or three feet high. Leaves opposite, petiolate, exstipulate, ovate, acuminate and cuspidate, rounded and cordate to subcordate at base, glabrous, green or subglaucous, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long and wide; petioles up to 1 line long; the leaf pairs $\frac{1}{2}$ to $2\frac{1}{2}$ inches apart. Inflorescence in few flowered racemes which are terminal on the stems and short branches, the flowers bright purple, veiny. Bracts small, lanceolate, purple, up to 1 line long; pedicels 6 to 7 lines long. Sepals 5, very unequal, three exterior oblong-lanceolate, very small, the two lateral ones (alæ) petaloid, ovate, unequal sided, obtuse at apex, very unequal at base, purple, veiny, 8 lines long, by 5 lines broad. Stamens 8, united in a slit tube, anthers erect, 1-celled, opening widely at apex, and with a few hairs at base. Style thickened upwards, and bent; stigma oblique. Capsule membranous, compressed, elliptical, obcordate, 2-celled, dehiscing loculicidally at the edges, cells 1-seeded, seeds pendulous.

Habitat: NATAL: Coast and midlands. *Gerrard & McKen*, 809; Inanda *Wood*, 260; near Durban, *Wood*.

One species only of this large genus has been figured in this work, viz., *P. Capillaris*, E. M. in Vol. I., plate 83, that plant, however, being a slender plant with small almost inconspicuous flowers. The plant now figured is an undershrub reaching to two or three feet in height, and with much larger and handsomer flowers. It is frequently cultivated in Europe, and is well worth a place in any garden, but we have not seen it in cultivation in Natal. It is usually found on grassy hills and plains exposed to the full heat of the sun.

Fig. 1, calyx; 2, corolla; 3, staminal tube opened; 4, a stamen; 5, pistil; 6, longitudinal section of capsule; 7, capsule; *except fig. 7 all enlarged; fig. 7 natural size.*

PLATE 399.

BAUHINIA TOMENTOSA, Linn. (Fl. Cap. Vol. 2, p. 275).
Natural Order LEGUMINOSÆ.

A handsome shrub bearing large sulphur-yellow flowers, the upper petal having a deep claret coloured blotch at the base inside. Stem erect, much branched, bark light coloured, glabrous. Leaves alternate, petiolate, stipulate, rather broader than long, subcordate at base, cleft nearly or quite half way down into two obtuse lobes, the central vein excurrent as a slender mucro, margins quite entire; 7-veined at base, dark green and glabrous above, pale and finely pubescent beneath; stipules linear, 4 lines long, soon deciduous. Inflorescence axillary, the flowers usually in pairs, occasionally 1 to 3, peduncles $\frac{3}{4}$ to 1 inch long, pedicels 1 to $1\frac{1}{4}$ inch long, with 3 linear, very deciduous bracteoles $\frac{1}{4}$ inch long. Calyx limb spathaceous, entire or 1 to 3-fid, $\frac{3}{4}$ inch long and wide at the broadest part, at first erect, afterwards strongly reflexed, tube short, subcylindrical; disk reaching mouth of calyx tube. Petals 5, sub-equal, ovate, entire, yellow, veiny, the upper with a large dark claret coloured blotch with serrated margins at its base inside. Stamens 10, free to base, unequal, strongly curved at apex, all fertile, anthers slitting. Style curved, a little longer than the stamens, included; stigma capitate, and faintly 2-lobed. Legume strongly compressed, flat, margined, crowned by base of the persistent style, 8 to 10 seeded.

Habitat: NATAL: Bluff, round edge of the Bay, *Wood:* Umkomaas, *McKen.*

A very handsome flowering shrub not uncommon in cultivation. Also a native of Asia and tropical Africa. In Natal it has been found on the South coast only; we know of no record of its having been collected on the Durban side of the Bay, and had it been there it could scarcely have been missed, as its large flowers are very conspicuous, and it remains in flower for a considerable time.

The genus *Bauhinia* includes according to the Genera Plantarum about 150 species widely dispersed in tropical regions; the generic name *Bauhinia* is in honour of two botanists, John and Caspar Bauhin, who lived in the sixteenth century.

Fig. 1, peduncle with young buds, showing bracts; 2, flower with petals removed; 3, calyx; 4, stamen, front view; 5, same, back view; 6, pistil; 7, stigma; *all enlarged.*

Bauhinia tomentosa, *Linn.*

Sphedamnocarpus pruriens, *A. Juss.*

PLATE 400.

SPHEDAMNOCARPUS PRURIENS, Planch. (Fl. Cap. Vol. I., p. 232; Sub. Acridocarpus). Natural Order, MALPIGHIACEÆ.

A much branched climbing plant with yellow flowers. Stem and branches terete, younger parts finely tomentose. Leaves opposite, petiolate, exstipulate, oblong, linear-oblong or ovate, entire, mucronate, glaucous beneath, minutely and sparingly pilose; $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, 2 to 10 lines wide; petiole up to $\frac{3}{4}$ inch long, minutely bi-glandular just below the apex, the glands either not always present or early deciduous. Inflorescence subumbellate; umbels 3 to 4-flowered, terminal on the branches or occasionally axillary; pedicels, slender, up to 1 inch long, bracteate at base, and articulated two-thirds from base. Calyx 5-parted to base, sepals oblong, obtuse, pilose externally. Petals 5 hypogynous, clawed, broadly ovate, minutely lacerate in upper portion, veiny, glabrous, twice longer than sepals. Stamens 10, perfect, filaments connate in a ring at base; anthers oblong, subcordate at base, introrse, erect, basifixed, slitting. Ovary free, of 2 or 3 united carpels; styles 2-3, longer than stamens; stigmas obtuse. Samaras 3, each with a dorsal wing which is 4 to 5 times longer than the fruit, the whole covered with long white hairs which lie flat on the surface, and are easily detached when the fruit is ripe.

Habitat: NATAL: Near Durban, *Wood*; Nonoti, 200 feet altitude, *Wood*, 8921. Flowering in January. Inanda, *Wood*, 20.

The genus *Sphedamnocarpus* includes 3 species, two being natives of Angola, and the present species; in the Flora Capensis and also in the Index Kewensis this plant appears as *Acridocarpus pruriens, Juss*, but the name here given is the correct one.

The plant is not uncommon in the coast districts, and is usually found climbing over bushes at outskirts of woods; the yellow flowers are rather conspicuous. The hairs on the fruits are easily detached and are somewhat irritating when in contact with the skin. We are not able to ascertain the native name, but it is used by them medicinally.

Fig. 1, a flower, petals removed; 2, a petal; 3, a stamen, front view; 4, same, back view; 5, pistil; 6 samara; fig. 6 *natural size, remainder enlarged.*

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ERRATA.

Plate 312, List of details, delete "4, cross section of ovary."
„ 314, „ „ after "2, same opened" insert "3, corolla opened, showing stamens and staminodes."
„ 325, „ „ for "stamens" read "stamen."
„ 326, „ „ for "calyx" read "carpels."
„ 327, „ „ for "perfect florets" read "perfect floret."
„ 328, „ „ for "ond portion" read "and portion."
„ 331, „ „ for "6, achenes" read "6, achene," and insert "7, style and stigmas."
„ 339, „ „ for "fig. 1, pistillate flower" read "pistillate flowers."
„ 363, „ „ for "fig. 3" read "4," for "fig. 4" read "5," for "fig. 5" read "6," for "fig. 6" read "7."
„ 369, „ „ before "all enlarged" insert "except fig. 7."
„ 375, „ „ 3rd line from base for "scales" read "scale."

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